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NOV/DEC 1999 VOL.2 NO. 6

# HANDHELD PC MAGAZINE

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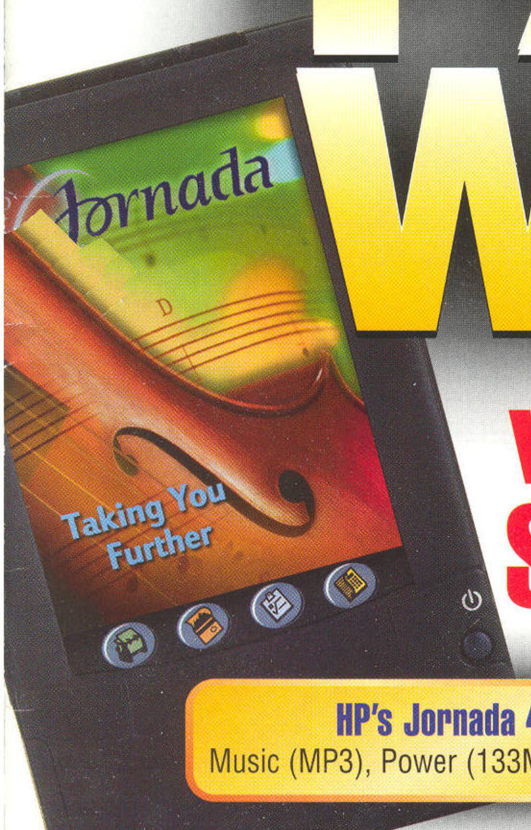
# PALM WARS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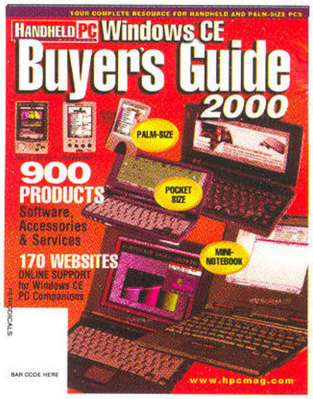
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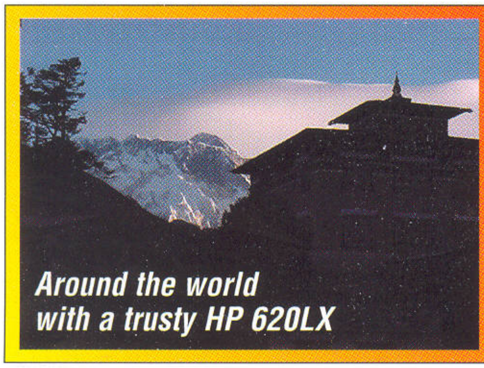
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with a trusty HP 620LX

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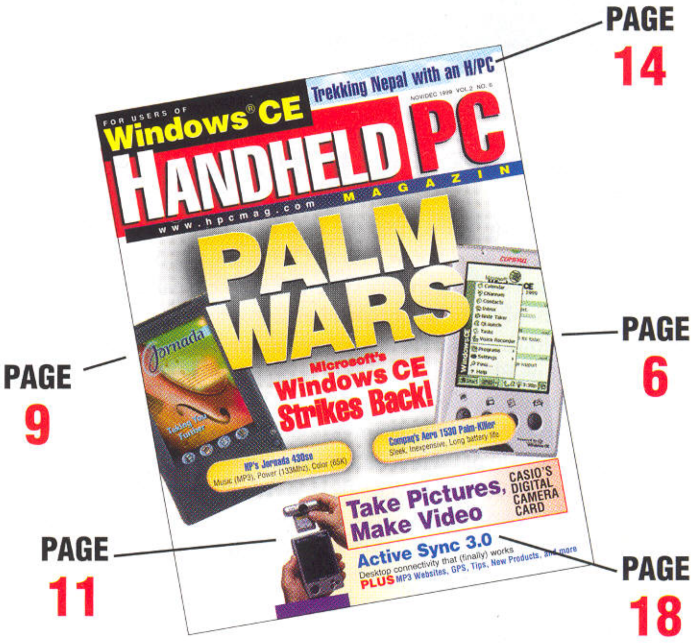
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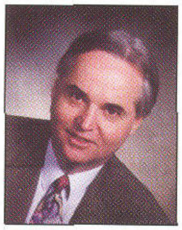

# From The Editor

**Rich Hall**

## Windows CE in the new millenium

Everybody knows that the new millenium means change, but there's nothing "new" about change in the world of Windows CE! In the last two years we have seen three major revisions to the Windows CE operating system, three new categories of PC Companions, over 15 new manufacturers of these devices, and an explosion of new third-party hardware and software accessories. However, we've also started to see a little bit of a shakeout in the Windows CE World.

Philips Electronics recently announced that it was getting out of the Windows CE business completely. Last year Philips discontinued its Velo Handheld PC and it has now decided to sell off its remaining Nino Palm-size PCs and focus on mobile phones. Philips is the second of the original group of eight PC Companion manufacturers to discontinue their Windows CE efforts, preceded earlier this year by LG Electronics. Philips and LG both produced quality PC Companions and it's a little sad to see them go. But the shakeout process is part of a cycle repeated whenever new technology is introduced.

The good news is that new PC Companion manufacturers are popping up all the time, and the remaining group of original OEMs seem as committed as ever to developing new devices and supporting old ones. For example, in this issue we not only look at Hewlett-Packard's new Jornada 430se Palm-size PC, we also review HP's ROM Upgrade Module, which transforms their older 620/660LX Palmtop PCs into H/PC Pro powerhouses.

Compaq was another of the original manufacturers, and in this issue Terence Goggin takes a look at Compaq's sleek new Aero 1530, the lightest and smallest Palm-size PC yet. Compaq is positioning the 1530 to go head-to-head with the Palm V. I review HP Jornada 430se. It's faster than its predecessor, has better battery life, and now has stereo MP3. (Watch the climax of the new James Bond movie and see if you notice anything that looks familiar.) Also, I write about the fun I had with Casio's new Digital Camera Card. It's the smallest camera I've ever seen. It slips into the CompactFlash slot of Casio's E-100/105 and lets you take pictures, and video! Check it out!

The other big end-of-the-millenium news is ActiveSync 3.0, the newest version of Microsoft's Windows CE synchronization software. Craig Peacock's review has more on this, but the bottom line is that Microsoft finally got it right.

There's a lot more in this end-of-the-millennium issue worth mentioning. I may have had fun with Casio's Digital Camera Card, but Mark Virtue had more fun "trekking" through the Himalayas and around the world with his Handheld PC. Ed Zabrek had some fun finding his way around Houston with a Palm-size PC Global Positioning System. And Chris De Herrera had some more fun finding out which Ethernet Card was best for fast data synchronization. Unfortunately, I can't comment on the amount of fun David Shier had reviewing Pocket Access and the various database programs for Windows CE.

In the first or second quarter of the first year of the new millennium, Microsoft will release Windows CE 3.0. The new version will offer a host of new features for developers of specialized embedded-systems devices, and for the consumer-oriented PC Companions. Windows CE will begin the new millenium with better synchronization software, a stronger operating system, and stronger, more focused manufacturers offering a wider variety of PC Companions. These changes bode well for Windows CE in the new millennium.

A special end-of-the-millennium "thanks" goes to *Handheld PC Magazine*'s associate editors and regular contributors. An even bigger "thank you" goes to our subscribers. See you in the Third Millennium!

Rich Hall

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# Inbox

*Welcome to the first "Letters to the Editor" section in Handheld PC Magazine. Most of the letters in this issue turned out to be questions about hardware and software, but general comments are welcome as well. Because of staff limitations, we cannot respond to all questions. If you have improvements you'd like to see in Windows CE, PC Companions, or* Handheld PC Magazine, *please send those along also. All responses, unless otherwise indicated, are from Rich Hall, Editor of* Handheld PC Magazine. *You can e-mail Rich at rich@thaddeus.com.*

## Palm-size PC spreadsheet program?

I recently purchased a Palm-size PC and I am looking for software that reads Pocket Excel files. Do you have any suggestions?

**Danny Kucer (dkucer@artmetco.com)**

*Palm-size PCs don't come with a built-in spreadsheet program, but there are P/PC spreadsheet programs available from third-party vendors. Check out SpreadSheet (www.bsquare.com), Pocket Spreadsheet (www.surerange.com) and PTab (www.z4soft.com). Also, you can export spreadsheet data to text files and use the Palm-size PC's Note Taker application to view and edit the document. However, this is a one-way process. Rich*

## Dictionary program for the PC Companion?

Can you tell me if there is a dictionary for CE out there? I have a Casio E-11 and cherish it. Thanks.

**Joe Belmonte (bgman@starnetinc.com)**

*There are a number of spelling checkers and a number of English-to-other-language dictionaries, but the only true dictionary I could find was Pocket Dictionary, a 20,4000 word U.S. English dictionary. There is a demo available at the developer's Web site (Surerange, www.surerange.com). They also have Pocket Thesaurus, a 30,000-word dictionary providing synonyms for frequently used words. Hope this helps some. Rich*

## Graphics on the PC Companion?

Do you know a Windows CE program similar to CorelDraw or PageMaker?

**Peter Grimm (PeterGrimm@compuserve.com)**

*Don't hold your breath for a PC Companion page layout program, or even a full-featured graphics program. Those programs are better suited to more powerful desktops with larger file storage capabilities and better displays. However, there are a few basic graphics programs you can check out, including PocketDraw (www.systemix.com), PalmItchSketch (www.cemonster.com), and One Cat Doodler (www.onemanandacat.com). Microsoft Power Toys includes a Pocket version of Paint. You can download it for free at www.microsoft.com/windowsce/Products/download/. – Rich*

## Where can I buy Pocket Access

I read your article entitled "Practicing What I Preach." In it you show a graphic of Pocket Access. I have tried the MS Soft and also search engines to get information on the product. I am VERY interested in purchasing it, but I can't find it anywhere. Any suggestions?

**Ana Wyatt (Bluzduo@aol.com)**

*Pocket Access is an application that comes built into the Handheld PC Pro class of PC Companions. It is not a user-installable piece of software and cannot be purchased separately. However, many manufacturers of the Windows CE 2.0 Handheld PCs will offer upgrade chips for their older H/PCs that will turn them into H/PC Pros. They will then have Pocket Access. Check out the Web site of your H/PC manufacturer to see if an upgrade chip is available. —Rich*

## Pocket Office on a Palm-size PC

Thanks for the great article on the E-100. Can't wait to try one! Question: I'm trying to decide between E-100+, NEC 770, and the Phenom Express. Can the Pocket Office suite found on the H/PC Pros be loaded onto a Palm-size PC? I'd like to get H/PC Pro functionality from a Palm PC, if it's possible. I'll ditch the keyboard in favor of Calligrapher 5.2 on the E-100. Really enjoy your magazine!

**Brad Blasingame (JBB1@email.com)**

*The Palm-size PCs come with Pocket Outlook (Calendar, Contacts, Tasks and Inbox) but do not yet have versions of Pocket Excel, Pocket Word or Pocket PowerPoint. The versions available for the H/PCs are designed for keyboard input and the H/PC screen orientation. On top of that, they are built-in programs and are not available for download. There are some vague rumors that Microsoft is working on a P/PC version of Word and Excel, but I haven't heard anything about it. Note that there are P/PC spreadsheet programs available from third-party software vendors (see first letter). —Rich*

## Synchronize a Franklin REX Pro and an H/PC

How do you transfer data from a REX Pro card to an Sharp 4600 H/PC?

**Franklin Fu (franklinfu@htil.com.hk)**

*The REX Pro is a Personal Information Manager the size of a PC Card. There is no direct way to synchronize a REX Pro card with a Sharp 4600 H/PC. However, you can synchronize the REX Pro with a desktop PC using software that comes with the device. Then you can synchronize the Sharp 4600 (or any H/PC) with the desktop PC using Windows CE Services (software from Microsoft that comes with all H/PCs). A company called Starfish Technology created a product called TrueSync Plus for REX that lets you download data from the desktop PC to the REX Pro card. You can find out more about TrueSync at the Starfish Web site: www.starfish.com/products/truesync. Hewlett-Packard bundles a utility with its Jornada H/PCs that lets you slip the REX card in the Jornada's PC Card slot and then download data from the Jornada to the REX. —Rich*

## Improving *Handheld PC Magazine*

*Handheld PC Magazine* targets a much broader audience than your earlier magazine (*The HP Palmtop Paper*) and is not nearly as focused. Consequently, there is a fair amount of material that I am not interested in, particularly in the coverage for all those machines. Here are my suggestions for improving the publication:

1. Concentrate on applications and accessories that are of interest to as wide a range of users as possible. Regardless of the device one uses, the apps and accessories are common.

2. Have more articles showing how people use their PC Companions. Users love this stuff and it gives them ideas to improve their own usage.

3. Spend less time covering all the different machines. A review of a featured machine is OK, but don't try to tell readers about each and every model, in each and every issue. If you want to include material on all the possible models, put it on your Web site.

4. You seem be giving a lot of space to wireless. I think this is a pretty small segment of the user base and my guess is that most people aren't interested. I don't read the Seybold articles.

5. I like all the advertisements. They help keep readers informed on products.

6. I would prefer a monthly publication cycle and would probably pay a little more for it if it becomes more focused on my needs.

Finally, I notice that you have lowered the annual rate to $19.95. As you try to reach a broader market, you have to find customers who are interested in more general things. It's hard to be all things for all people. I, for one, am quite happy to pay a higher rate for a more useful publication.

**Arnie Simpson (Arnie@TamarackAcres.com)**

*Arnie, thanks for the feedback – Hal Goldstein, Rich Hall*

# newsBYTES

### ActiveSync 3.0 now available

Microsoft's latest upgrade of Windows CE services is now available. ActiveSync 3.0 significantly improves synchronization between PC Companions and desktop PCs, including Windows NT machines. Please see our review of ActiveSync on page 18 for more information.

### Handheld PC Pro Service Pack available

Microsoft has released a Service Pack for its Handheld PC Pro class of PC Companions. It fixes problems with, and adds features to the built-in Pocket Applications. These fixes are already built into some on the newest H/PC Pros. To find out, open the Systems application in your Control Panel and select the Applications tab. If it says you are running version 3.01 of the "Bundled Applications" you DO NOT need to install the service pack. If they are listed as version 3.0, go ahead. The service pack is supposed to be available on your PC Companion manufacturer's Web site, but we've only found it on Sharp's (go to www.sharp-usa.com, search on "service pack" and page down to "Mobilon Pro and TriPad Service Pak." It can also be found on www.cestation.com.

### Philips discontinues Nino

Philips Electronics, one of the original manufacturers of Windows CE Handheld PCs, is discontinuing its Nino line of Palm-size PCs. They will continue to support existing Nino users, but will sell off their remaining Nino 500 and 200 Palm-size PCs. They discontinued their Velo Handheld PCs last year.

### HP's new Jornada 430se Palm-size PC

Hewlett-Packard recently introduced the enhanced version of its Jornada color-screen Palm-size PC. The new 430se has faster CPU, more memory, a stereo headphone jack and a raft of new add-on software, including the new Hum MP3 player. Please see our review on page 9.

### One HP Jornada, please. Shaken not stirred!

Hewlett-Packard company will launch its new Jornada 430se Palm-size PC with a bang in MGM's latest James Bond movie, "The World is not Enough." In the movie, 007 and Dr. Christmas Jones, a nuclear physicist played by Denise Richards, use the good Doctor's Jornada to diagnose a nuclear bomb and defuse it. In the process they also defuse an international power struggle for the world's oil supply. See our review of the new Jornada 430se on page 9 of this issue. The Bond movie should be out in mid-November.

### Compaq's new Aero 1530: small, monochrome screen

Compaq has released its newest Palm-size PC, the Aero 1530. The new Aero is the smallest Palm-size PC available, and its monochrome display improves its battery life. Please see our review on page 6.

### Casio introduces new digital still and video camera for its E-100/105 Palm-size PCs

Casio, Inc. recently introduced its new Digital Camera Card, a small camera slips into the CompactFlash slot of its Cassiopeia E-100 and E-105 and adds still-image and video record and playback capabilities. See review on page 11.

### Fujitsu Introduces Intertop CX300 H/PC

Fujitsu Limited has introduced a new half-notebook -sized Handheld PC for the Japanese market. The Intertop CX300 weighs 880 grams, is equipped with a 7.8-inch color touch-screen LCD and a 15mm-pitch keyboard. More information at: www.fujitsu.co.jp/hyper text/news/1999/May/18-e.html.

### New Windows CE magazine focuses on enterprise solutions

Penwell Publishing's Enterprise Solutions for Microsoft Windows CE will focus on providing information resources for those interested in integrating Windows CE and CE devices into the enterprise. It is a free (controlled circulation) quarterly magazine. For more information visit www.enterprisesolutionsmag.com.

### 3Com spins off Palm Computing division

3Com will sell of its Palm Computing division, developers of the popular PalmPilot and the Palm III, V, and VII PDAs. The move is seen as an attempt by 3Com to re-focus itself and make technology alliances easier for 3Com, particularly with Microsoft. At least publicly, 3Com feels the spin off will be beneficial to Palm Computing, allowing them to better compete with Windows CE Palm-size PCs and other PDAs. Estimates of Palm's share of the market range as high as 68%.

### 3Com wireless Net services

3Com has announced that it will form a new company, OpenSky, to supply wireless Internet service for mobile phones and handheld devices. The new service will be available in the U.S. late this year, for users of the PalmPilot and some mobile phones. OpenSky plans to extend coverage to Windows CE devices, but has not announced a timeline for that.

### Psion's netBook to compete with Windows CE

Psion recently announced its new netBook sub-notebook computer, using the EPOC operating system, which is seen by many as the primary competitor to Windows CE. The netBook will have a full-sized VGA color screen, a 190MHz StrongARM processor, up to 64Mb of internal RAM, standard PC and CF Card slots, and will have version 1.1.4 of the Java Virtual Machine built in. Psion will offer a consumer version of the netBook. For more information, visit Psion's Web site at www.psioninc.com/ news/usanews.html.

### Handspring's Visor shakes up Palm world

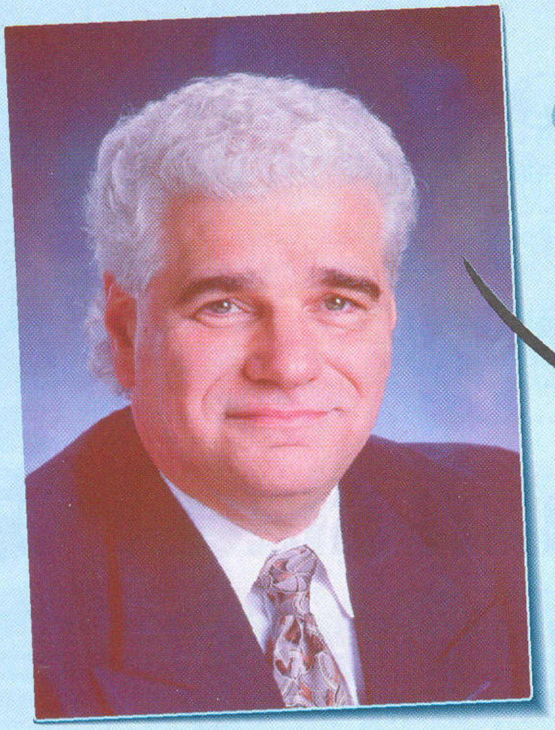
Visor is the new PDA from Handspring that is based on 3Com's Palm operating system and built-in applications. Visor comes with a "Springboard expansion slot" (similar to a CompactFlash slot on a Palm-size PC) that lets users add a variety of hardware and software modules. Currently available are a modem, backup module, 8Mb flash card, and the Tiger Woods PGA Tour Golf Module (a golf game). Handspring mentions additional modules (not listed, but presumable in development). This includes a pager, MP3 music player, universal remote control, GPS receiver, and game pack. Visor's pricing starts at $149.99. For more information, visit Handspring's Web site at info.handspring.com.

### VTech introduces the Helio entry-level PDA

The Helio (from VTech, vtech.wwwebcrafters.com) is a small, no-frills PDA similar in size and functioning to the original PalmPilot. Like the Windows CE Palm-size PCs, it comes with CIC's Jot handwriting recognition software built-in. In addition, it has a complete suite of basic PIM software. The Helio is a good entry-level PDA positioned well for college students and other low-budget consumers. The Helio is priced at $199 and is available from VTech's Online Store (www.vtechinfo.com/vtech.storefront/)

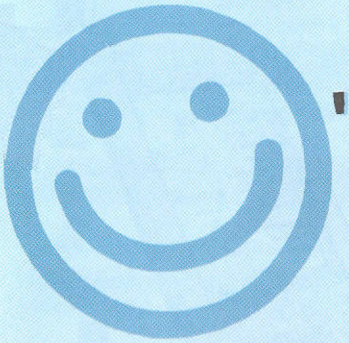
### Christian Computing Magazine adds Windows CE Coverage

The online edition of Christian Computing Magazine (www.gospelcom.net/ccmag/) now includes a monthly column dedicated to Windows CE. The articles, written by Craig Rairdin of Laridian, focus on Windows CE and its applications for the Christian reader. ■



George Fragos

> "I would like to thank you very much for being so proactive in solving my problem. I am up and running with News Force. It was easy to get up and running with my ISP's News server.
> In the future when I have a Windows CE software need, I plan to check with Ruksun first. The service stands tall against your competition."



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**SPECIAL SECTION**

# The World in the Palm of Your Hand

There are a lot changes happening in the Palm-size PC world. Compaq has introduced the newer and smaller Aero 1530 and Hewlett-Packard has just come out with its enhanced Jornada 430se. Finally, Casio has just released its Digital Camera Card, which turns its E-100 and E-105 Palm-size PCs into still-image and video recorders. In this issue we'll review the Aero 1530, the Jornada 430se, and the Digital Camera Card. But we'll also do something we don't normally do – take a look at the competition. Terence Goggin's review of the Aero 1530 compares it to the Palm III and V (Palm Computing's popular PDAs).

# The Smallest Palm-size PC

## *Compaq positions its slim new monochrome-screen Aero 1530 to compete with Palm Computing's Palm V*

**BY TERENCE GOGGIN**

The Aero 1530 is the smallest and lightest Palm-size PC I've seen. It's the only Palm-size PC that's able to slip into your shirt pocket without weighing you down. In that respect, it's similar to Palm Computing's Palm III & V computers. Interestingly enough, Compaq is positioning the 1530 as a direct competitor to the Palm devices!

### Smallest Palm-size PC

Compaq's Aero 1530 is only slightly longer than the previous holder of this title – the original Everex Freestyle Palm-size PC. But the Aero 1530 edges the Freestyle aside in the more important width and thickness dimensions. Also, it's slightly lighter than the Freestyle. More importantly for this review, it compares well in size and weight to the Palm computers. In fact, it's smaller and lighter than the Palm III and only slightly larger and heavier than the Palm V.

### Extended battery life

The Aero 1530 also gets a very respectable battery life of up to 14 hours. This is largely due to the 1530's gray-scale display, which is very power efficient. Here again, the 1530 compares nicely against both a Palm V device and other Windows CE devices. For instance, Compaq's own Aero 2100 color-screen Palm-size PC gets up to 10 hours of battery life. The Palm III gets up to 25 and the Palm V up to 17 hours. Like many other Windows CE devices in the P/PC class, the Aero 1530 has Lithium-Ion rechargeable batteries. I only found it necessary to recharge the batteries about once every 2 weeks. (Incidentally, the Palm Web site claims that the Palm III and V can go for a month without charging, but did not give hours-of-continuous-use estimates.)

### Readable display

The Aero 1530 features a 16 gray-scale "semi-transmissive STN" display, which seems to function especially well in low-light situations such as using the device at night. The backlight on the display makes the text appear quite readable under these conditions. Further, there is a setting for the backlight that allows the user to reverse the colors such that the background is dark and the text is light. To do this or not is a matter of preference – the device seems equally as readable under either setting. Both the Palm III and V have a backlit monochrome display.

### Plenty of power

The Aero 1530 is powered by the same chip found in the Aero 2100 – NEC's 70 MHz MIPS chip. I found it to be very responsive for all of the common tasks such as opening or closing an application, painting the screen, and so on. The 1530 has 16 MB of RAM (there's no mention of expandability), a serial port, an IrDA port, built-in microphone and speaker, and a headphone jack. The 1530 also offers a standard Type I CompactFlash slot, for use with memory

COMPAQ
Aero
COMPAQ

*Terence "Dr. CE" Goggin, author of* The Windows CE Developer's Handbook, *a recognized Windows CE expert, has written numerous books and articles on Windows programming and the Internet. He is Los Angeles-based consultant specializing in Windows CE solutions. He can be reached at terenceg@doctorce.com "Dr. CE" is a trademark of Terence Goggin.*

The Aero 1530 sports a stylishly slim profile. Be careful you don't lose it!

expansion cards or other Type I-compatible Compact cards. The 1530 ships with an AC adapter, which can be plugged into the base of the docking cradle or directly into the side of the 1530, to power the device and recharge the Lithium-Ion battery pack.

Both the Palm III and V are powered by the Dragonball EZ CPU. It is a slower processor than the NEC MIPS, but the Palm OS and applications are simpler than their Windows CE counter parts. The basic models of the Palm III and V came with 2MB of RAM. The Palm V was upgraded to 8MB. Again, this is less than most Windows CE devices, but again, because of the smaller operating system and applications, not as much is needed. Finally, both the Palm III and V have infrared ports to transfer data between each other, and docking cradles that connect to desktop PCs via cable, for data synchronization.

**Compaq Aero 1530 Palm-size PC — $299**

**Spec Sheet**

| | |
|---|---|
| Contact | www.compaq.com/products/handhelds |
| **Hardware** | |
| CPU | 70 MHz NEC MIPS |
| Display | 4" diagonal 240x320 16-grayscale backlit touchscreen |
| Memory (in MB) | 16 RAM/ 16 ROM |
| Communications | None |
| External ports | Serial; fast IrDA; headphone jack. |
| Card slots | One CF Card |
| Power | Lithium Ion (14 hr per charge); AC adapter |
| Dimensions / Weight | 5.13 x 3.11 x 5 in / 5 oz |
| Accessories, standard | AC adapter; docking cradle; serial cable; manuals; Windows CE Services; additional software. |
| Options | 56Kbps CF modem card; CF Storage cards; Auto power adapter; spare AC adapter and battery; Carrying cases |
| **Software** | |
| Operating System | Windows CE 2.11 |
| Built-in MS apps. | Palm-size PC Pocket Outlook, Mobile Channels, NoteTaker, accessories and set-up utilities. |
| Software (built-in and CD ROM) | Users Guide; Asset Viewer & Manager; Audible Player; CoolCalc; File Explorer; Inso QuickView Plus; Picture Viewer; QMenu; QUtility; VCA Finance; Spanish/English Dictionary (Spanish language models only). |
| Comments | Smallest, lightest Palm-size PC; monochrome screen readable in daylight; good battery life. |

The Aero 1530 has four simple "quick launch" buttons on its face, in a row about a 1/2" from the bottom of the device. Centered along the bottom edge of the device's face is another button, this one for turning the device on and off. It has a similar light-gray "polished steel" plastic case as the Aero 2100. The Palm III & V have dark-gray cases with a similar placement of their application launch keys.

### Software: The latest Windows CE and more

The Aero 1530 runs the latest version of the Windows CE operating system (2.11). This might not mean too much to users, but for developers this is good news. CE version 2.11 offers additional features, which make it possible for developers to produce better software. If a developer wants to take advantage of the improvements in CE 2.11, and the advantages associated with a monochrome-screen Palm-size PC, the Aero 1530 is a great solution. (Casio also markets the E-15, a monochrome-screen version of their latest Palm-size PC.)

Like other Palm-size PCs, the Aero 1530 comes with Pocket Outlook (Calendar, Contacts, Tasks, Inbox), Mobile Channels, Note Taker, and the other built-in Palm-size PC applications and communications utilities provided by Microsoft. The 1530 also comes with ActiveSync, a desktop PC application that lets the Aero connect to a desktop PC for data transfer and synchronization. In addition to these, Compaq provides an impressive list of add-on software, including the following:

- Users Reference Guide in .pdf format.
- Asset Viewer — provides system, version, memory, and display information.
- Audible Player (www.audible.com) – turns the Aero 1530 into an audio book reader. Selections available on Audible's Web site include business, fiction and non-fiction works, radio programs, and more. Listen through the built-in speaker, or by plugging optional headphones into the audio jack.
- CoolCalc (www.applian.com) – adds multiple calculators to the Aero 1530. CoolCalc includes financial and scientific calculators, a currency converter and more.
- File Explorer – a Palm-size PC file manager similar to Windows Explorer.
- Inso QuickView Plus – View word processing, spreadsheet, and presentation files.
- Picture Viewer – lets you view .bmp and .jpeg images.
- Pocket Asset Manager – collects Asset Viewer information and places it on PC as an HTML file.
- QMenu – lets you switch between or close active tasks and more.
- QUtility – lets you adjust backlight, backup and restore to a CF memory card, change the application buttons to game keys (up, down, right, left), access system diagnostics, adjust screen contrast and more.
- Syracuse Language Systems Spanish/-English dictionary – available on the Spanish and Latin American models of the 1530.
- VCA Finance (www.vca.de) – adds a CE-based expense tracker and financial manager to the Aero 1530.

The Palm III and V come with Date Book, Address Book, an e-mail application, To Do List, Memo Pad, Expense Calculator, Games, and HotSync for local and remote synchronization with desktop PCs. Desktop versions of these applications are included.

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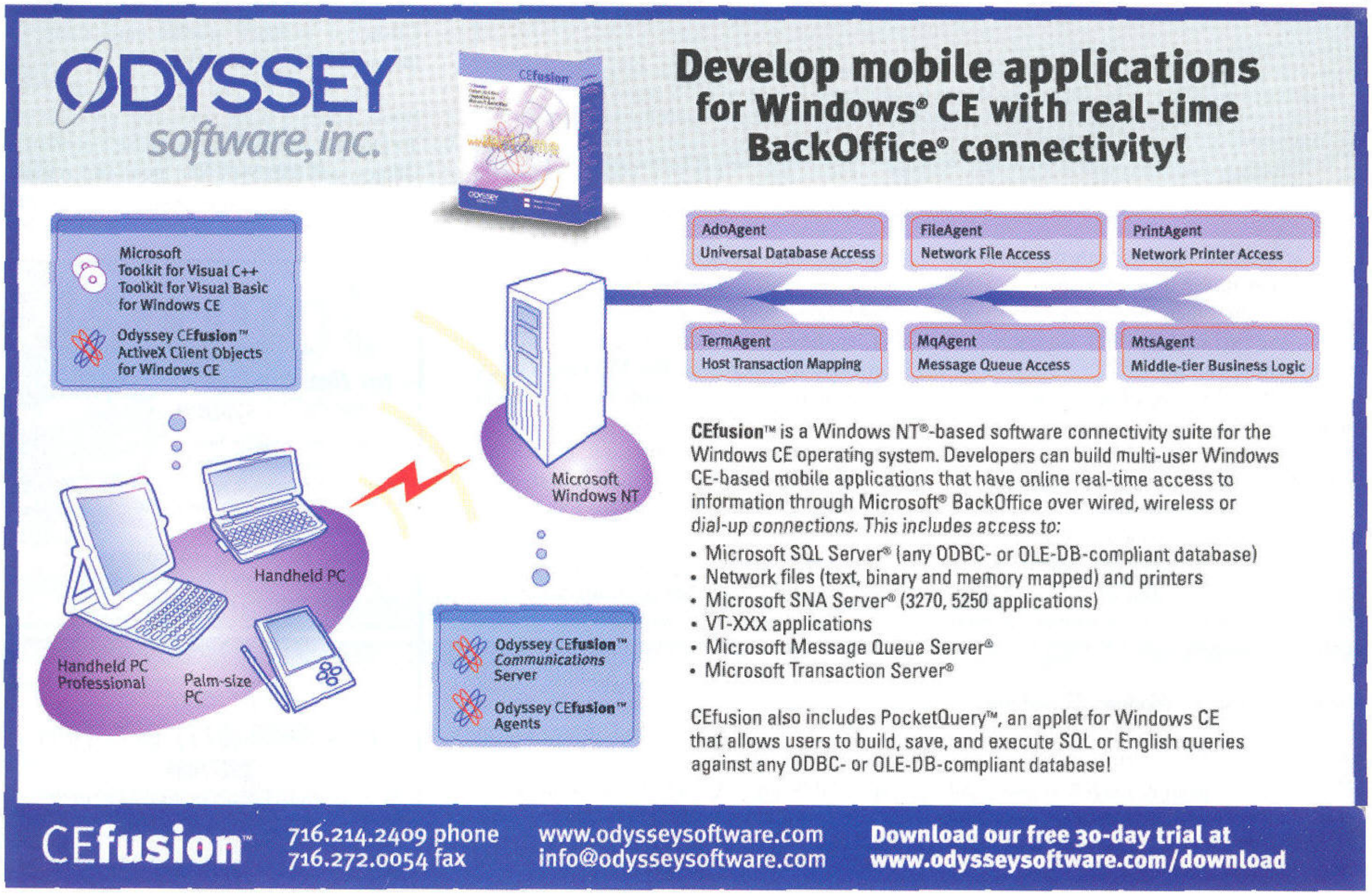
## Hardware Comparison Chart: Compaq Aero 1530 Palm-size PC and 3Com Palm III & V

| | Palm V | Aero 1530 Palm-size PC | Palm III |
|---|---|---|---|
| Dimensions (height x width x thickness) | 4.5 x 3.1 x 0.4 in | 5.1 x 3.1 x 0.5 in | 4.7 x 3.2 x 0.7 in |
| Weight (including battery) | 4.0 oz | 5.0 oz | 6.0 oz |
| Battery life (continuous use, fully-charged batteries) | 17 hr | 14 hr | 25+ hr |
| Display | 16 gray-scale | 160 x 160 | 160 x 160 |
| LCD | backlit monochrome | backlit monochrome | backlit monochrome |
| CPU | Dragonball EZ | 70 MHz MIPS | Dragonball EZ |
| RAM/ROM | 2Mb / n.a | 16Mb / 16Mb | 2Mb / n.a. |
| Price (suggested retail) | $399 | $299 | $299 |

### A truly compact Compaq

Compared to the color screen Palm-size PCs, the monochrome screen of the Aero 1530 (or the Palm III & V) can be a bit disappointing. However, the size of the 1530, along with its battery life and price help balance out the equation quite nicely. The Aero 1530 is priced at just $299 – that's a $100 to $150 off the price of the newer Palm-size PCs. About $100 lower than the Palm V and about even with the Palm III. The Aero 1530 is available through Compaq dealers and other computer stores. You can order it online at www.mobileplanet.com. For more information, visit Compaq's Aero Web site at *www.compaq.com/products/handhelds/1500/index.html*.

The Compaq Aero 1530's compact size and extremely light weight make it truly ideal for putting in a shirt pocket – unlike other supposedly "pocket-able" devices. The Aero 1530 may help to redefine what it means to be a "Palm-size PC." ■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# HP adds MP3 and Power to its Jornada Palm-size PC

## *HP's new Jornada 430se comes with a stereo headphone jack, built-in MP3 player, and much more.*

**BY RICH HALL**

Hewlett-Packard made a good thing better with the release of the new Jornada 430se color-screen Palm-size PC. The 430se is an update of the Jornada 420 we reviewed previously (see page 61, Mar/Apr 99). From the outside, it looks identical to the 420, but looks can be deceiving. HP upgraded the CPU from the 420's 100 MHz SH3 to the newer 133 MHz version of the same chip. The makes the 430se more responsive without adversely affecting battery life. The 430se comes with 16 Mb of RAM standard, instead of an option, as it was with the 420. The only other change to the hardware was replacing the mono headphone jack with a stereo version. This makes the Jornada 430se and the new Casio E-100/105 the only Palm-size PCs with stereo output capability – a must for listening to MP3 music. (Note: of the new H/PC Pros, only the IBM WorkPad z50 has a stereo headphone jack.)

### Hum MP3 player adds music to your life

The Hum MP3 player is the most important addition to the Jornada's add-on suite of software. In combination with the built-in stereo headphone jack, Hum transforms the 430se into a mean and lean music machine. (Take a look at "PC Companions Online," page 41 of this issue for Web sites where you can download free MP3 music.)

Launch Hum on the 430se and a simple control panel is displayed (see Screen 1). The sliding bar on the left adjusts the volume. The Play button is in the center of the hub. Below it is Stop, above it is Pause. The backup (go to the previous track) and fast forward (go to the next track) buttons are to the left and right. It's pretty simple.

Jornada
Taking You Further

Tap on ▤ in the upper left and the Playlist pops up, displaying the MP3 files you have on your 430se (see Screen 2). Select the desired MP3 file, tap on open and you're ready to go. If you select an item in the Playlist and tap on the Edit button, a list of the tracks in that particular MP3 file is displayed. You can change the order of tracks, delete tracks you don't want to hear, or add tracks from other MP3 files to this file. Impressive!

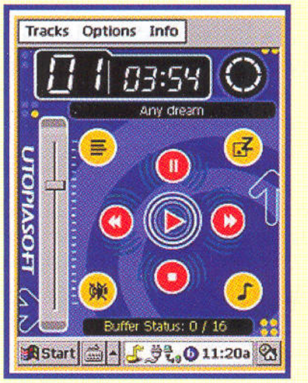
Hum plays ISO standard MP1, MP2 and MP3 files. It supports mono and stereo playback, and can play music through the 430se's built-in speaker or the stereo headphone jack. The speaker is not designed for playing music, but is OK in a pinch. However, listening to the new James Bond movie theme (the sample included with the Jornada) with stereo headphones was a wonderful experience.

The quality of music playback is also dependent on the processing speed of the PC Companion. The Jornada 430se, with its 133 MHz processor, did not seem to have any problems playing the MP3 files. I even ran a couple other applications on top of Hum, while the music was playing away. They loaded a little slower than normally, but performed well while Hum was humming away.

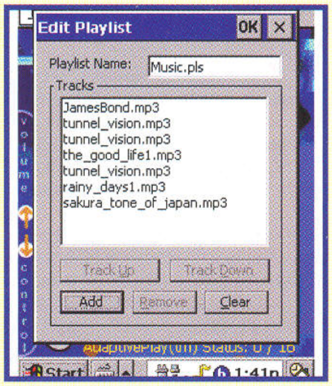
### Other software on the HP 430se

The Jornada 430se comes with the standard suite of Microsoft built-in software. This includes Windows CE 2.11, Pocket Outlook (Calendar, Tasks, Contacts, Inbox), Mobile Channels (lets you view downloaded Web content off line), and various accessories and utilities.

Below is a complete list of the additional software Hewlett-Packard included with the Jornada 430se. I've placed an asterisk (*) by programs that weren't found on the



Screen 1: The Utopiasoft's Hum MP3 player in combination with the HP 430se's stereo headphone jack turns the Jornada into high-fidelity MP3 music player.



Edit Playlist

Playlist Name: Music.pls

Tracks

JamesBond.mp3
tunnel_vision.mp3
tunnel_vision.mp3
the_good_life1.mp3
tunnel_vision.mp3
rainy_days1.mp3
sakura_tone_of_japan.mp3

Screen 2: Hum's PlayList displays the MP3 files you have on your 430se. The Edit feature shown here lets you change the order of tracks, delete tracks you don't want to hear, or add tracks from other MP3 files to this file.

Jornada 420. You'll notice that there are quite a few new programs.

On ROM (built-in, no need to install):

bTASK (bSquare Technologies, www.bsquare.com) – lets you navigate between applications and close unused applications.

EzExplorer (Ezos, www.ezos.com) — new-fashioned Windows Explorer.

HP Jornada Backup (HP software not available for other PC Companions) – lets you backup and restore the 430se to a CompactFlash Card.

* Hum MP3 Player (Utopiasoft, www.utopiasoft.com) – an MP3 player for PC Companions.

OmniSolve (LandWare, www.landware.com) – a forms based financial problem solver with built-in financial and scientific calculator.

HP Jornada settings (HP software not available for other PC Companions) – provides quick access to password; timer; reminder; color selector.

On CD ROM (user installs on Jornada):

- AudibleManager (Audible, www.audible.com) – installs on your desktop PC and lets you program your listening time with the content from Audible.com.
- AudiblePlayer (Audible, www.audible.com) lets you download and listen to audio books, magazines, news and more from the Audible Web site.
- AvantGo (www.avantgo.com) – access software for a free Internet service lets you download Web content, from over 100 popular channels, optimized for display on your Handheld or Palm-size PC.
- HP Easy Contacts (HP software not available for other PC Companions) – lets you display your Contacts in 4 views: List, Card, Edit, or Note. It supports your Microsoft Contacts database, so any information you add to HP Easy Contacts will be updated in Microsoft Contacts and vice versa.
- HP PIM Translator (HP software not available for other PC Companions) – translates PIM data from older HP Palmtop PCs into Windows CE Pocket Outlook format.
- HP Voice Contacts (HP software not available for other PC Companions) – a speech recognition application that lets you retrieve telephone numbers from your Contacts database with voice commands.
- HPC Notes 3.0 Lite (PhatWare, www.phatware.com/) – a powerful notes organizer with an intuitive user interface.
- HPC Notes 2.03 (PhatWare, www.phatware.com/) – adds a desktop PC version of HPC notes which synchronizes with the Jornada 430se.
- HPC Spell (PhatWare, www.phatware.com/) – adds a 90,000 word English spell checker (15-day trial version).
- Image Expert CE 2.0 P/PC (Sierra Imaging, www.sierraimaging.com/) – view images from a digital camera on Jornada 430se. Annotate them with voice, ink or text and share them via e-mail and IrDA.
- PhoneManager 2.02 (Trio, www.trio.com) – provides SMS (Short Message Service) send/receive functionality for GSM 900/1800/1900 phones via HP Jornada's built-in IrDA. (Ships with European and Asia Pacific Jornadas only. Free download available at Trio Web site.)
- Microsoft Outlook 2000 (Microsoft, www.microsoft.com) – the latest desktop PC version of Outlook.

All of the add-ons are useful, and the Hum MP3 player was my top favorite. Here are my other award winners:

1. The "Most Useful" Award – goes to bTASK. I'm always switching between and closing down applications.

2. The "Most Valuable When Things Go Wrong" Award – goes to HP Jornada Backup. You'll need to buy a CompactFlash Card, but it's worth it.

3. The "Don't Waste Your Spare Time" Award – goes to the AudiblePlayer. I wish HP sold an automobile power adapter so you could use this while driving, without worrying about the battery.

4. The "Most Intriguing and Potentially Useful New Feature" Award – goes to HP Voice Contacts. Once it's set up, you press the Voice Record button, speak the name of the person, and Contacts opens displaying the information you want.

5. The "Why Don't All PC Companions Come With This Application" Award – goes to HPC Notes. It's a great information organizer that keeps getting better with each release. HPC Notes Lite is well suited to the 430se, and that it synchronizes with the desktop PC version of HPC Notes (also included) means that you can do your heavy-duty work at the office, sync with your Jornada, and access it wherever you are.

In case you didn't know it, James Bond uses the Jornada 430se to disarm a nuclear device in his new movie. I can't seem to find that application anywhere.

### Designed and built by engineers

I just checked www.mobileplanet.com and Mobile Planet has both Jornada Palm-size PCs in stock. The Jornada 420 goes for $429.95 and Jornada 430se for $499.95. I'd spend the extra $70 for a 430se. It has a better selection of software, faster processor and more RAM. The built-in stereo headphone jack is standard, which means you don't have to buy the stereo headphones as an expensive accessory.

Hewlett-Packard has the reputation of being a company run by engineers. The Jornada 430se isn't the smallest Palm-size PC (see the Aero 1530 review on page 6). It's not the sexiest either (check out the Philips Nino 510). And Casio's new Compact Camera Card keeps the Cassiopeia E-100/105 the leader of the multimedia category (see following review). But by God the HP Jornada 430se is powerful, and it seems like it has more add-on software than Mark McGwire has home runs. The Jornada 430se may very well be the best all-around Palm-size PC. ■

### Spec Sheet

### HP 430se Palm-size PC— $499

| | |
|---|---|
| Contact: | www.hp.com/jornada |
| **Hardware** | |
| CPU | 133 MHz SH3 |
| Display | 3.65" diag. 240x320 65K color backlit touchscreen |
| Memory (in MB) | 16 RAM / 8 ROM (upgradeable) |
| Communications | none |
| External ports | Serial; fast IrDA; stereo headphone jack |
| Card slots (Type II) | CF Card |
| Power | Lithium-Ion (7 hr per charge); AC adapter |
| Dimensions / weight | 5.1x 3.2x 0.9 in / 8.8 oz |
| Other features | Built-in microphone and speaker; LEDs indicate alarms, charging |
| Accessories, standard | AC adapter; docking cradle; serial cable; manuals; Windows CE Services; additional software. |
| Options | Docking Cradle; Travel Cable, External Charger; External Keyboard (English only); Battery; AC adapter; Carrying case |
| **Software** | |
| Operating System | Windows CE 2.11 |
| Built-in MS apps. | Palm-size PC Pocket Outlook, Mobile Channels, NoteTaker, accessories and set-up utilities. |
| Built-in Mfg & 3rd party apps | From HP: HP Jornada Settings, HP Jornada Backup Utility. From 3rd Party: bTASK, OmniSolve, EzExplorer, Hum MP3 Player. |
| User-installable apps (CD ROM) | From HP: HP Voice Contacts, HP PIM Translation, HP Easy Contacts. From 3rd Party: Image Expert CE, Phone Manager, HPC Notes Lite, AudiblePlayer. |
| Comments: | MP3 player and stereo headphone jack great for music. External keyboard very practical. |

# Multimedia Powerhouse!

## *Casio's Digital Camera Card slips into the E-100/105's CompactFlash slot and turns the Casio color-screen Palm-size PC into a still image and video recorder.*

**BY RICH HALL**

Over a year ago Casio broke fresh ground with their Cassiopeia E-100 Palm-size PC, the first Palm-size PC with a stereo headphone jack, and optional audio and video player. The Casio booth at the Spring 1999 COMDEX was swamped, and even PalmPilot users were breaking ranks and sneaking over to have a peek. Well, just when the rest of the Windows CE world is starting to catch up with Casio, they do it again by introducing their new Compact Digital Camera Card. To be fair, it's not the first digital camera card. Sharp introduced one in early 1998 (see review, pg. 6, M/J 98; also on www.hpcmag.com). But Casio's Digital Camera Card slips into a Compact slot, not a PC Card slot. And the Casio camera one-ups the Sharp product by capturing still images and videos!

We've already done a review of the Cassiopeia E-100 (see pg. 10, M/J 99). I won't repeat that here, but I have included a Spec Sheet on the E-100 for your reference. Casio has since released the E-105, which comes with 32 Mb RAM instead of 16, and includes the Casio Multimedia Pack as a standard feature (it's an option with the E-100).

### It's so small you hardly notice it

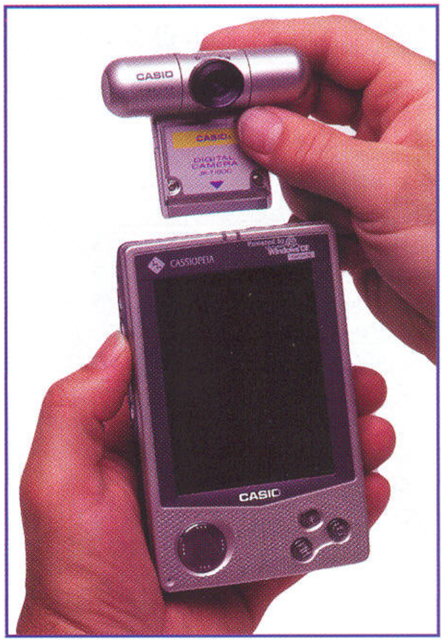
The Casio Digital Camera Card slips into the E-100/105's Compact slot, adding a little cylinder to the top of Cassiopeia (see photo). The Camera Card adds about one inch to the length of the Cassiopeia Palm-size PC, and only 1.6 ounces of additional weight.

You have to install the Casio Mobile Camera and Video Player software before you can use the Camera Card. This software already ships with the Cassiopeia E-105, but it's also included with the Camera Card so E-100 users don't have anything else to purchase. The Mobile Camera and Video Player software only works with the Cassiopeia E-100/105 – other PC Companion users will have to look elsewhere for a digital camera.

### Taking a photo is easy

After you install the software (the evaluation unit came with it pre-installed), slip the Casio Digital Camera Card into the Compact slot and turn on the Cassiopeia, and select and run the Mobile Camera application from the Start/Programs menu. Tap OK to get past the intro screen and to the camera screen (see Screen 1). At the top left of the screen you have three icons that let you take still images, videos, and display either. Tap on the left-most icon to capture still images.

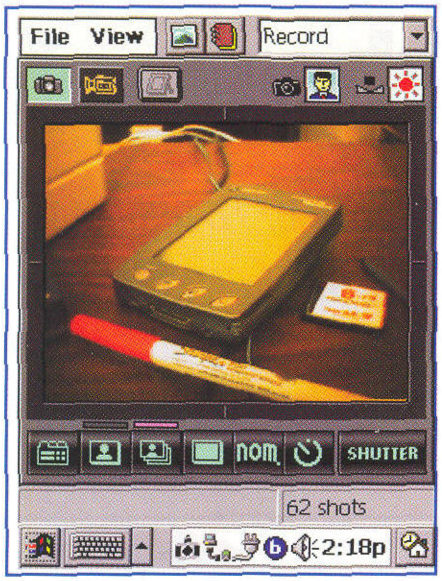
The still-image camera appears, displaying the image being viewed by the camera (see also Screen 1). A simple tap of the Shutter button in the lower right captures the image. Back to the icons on the top left, tap the third (right-most) icon to display the image you just took (see Screen 2). The image is automatically saved in the common JPEG format (see Screen 3), and can be transferred to another computer, or sent as an e-mail attachment to a co-worker or friend. The still-image camera has three compression settings: econ., nom., and fine. They don't affect the resolution of the images, but do affect the size of the file and the time it takes to load. You can further adjust the still-image (and video) camera for different lighting conditions (outdoor daylight, incandescent lighting, and fluorescent lighting). Finally, you can display thumbnails of all of the images (or videos) you've shot in the Playback selection screen (see Screen 4). Tap on the thumbnail to view the image or video.



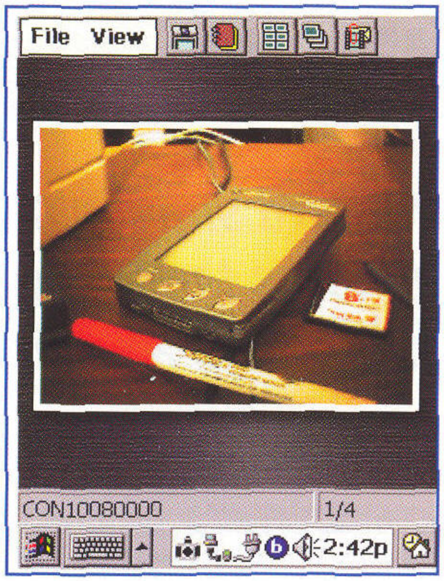
### A palm-sized video recorder

The video recorder is as easy to use as the still camera. Tap on the video camera icon (the middle icon, upper left in the Mobile Camera screen) and the video recorder screen pops up (see Screen 5). Tap on the Record button to start recording and the Stop button when you're finished. The button with the microphone icon lets you turn the sound record feature on or off. You also have the option of selecting a large or small image for the video. Larger image size and sound increase the size of the video files. Here's a comparison:

Video type (all 4 seconds long) – file size
Large image with sound – 152 Kb
Large image without sound – 129 Kb
Small image with sound – 96 Kb
Small image without sound – 77 Kb

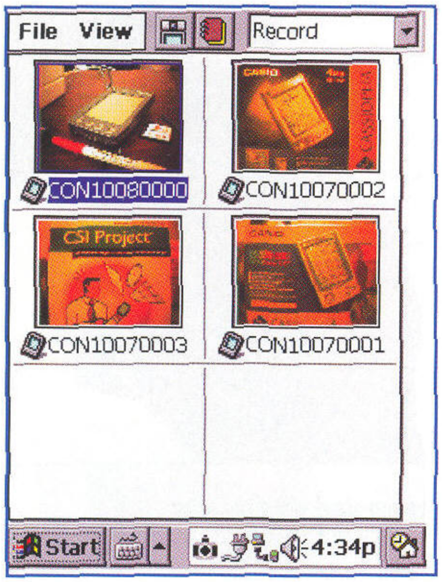


Screen 1: The Mobile Camera software on the Cassiopeia E-100/105 Palm-size PC displays the image being viewed by the Casio Digital Camera Card.



Screen 2: After taking a picture, you can display it on the Cassiopeia using Mobile Camera (shown here) or an image viewer application that can display JPEG.

Screen 3: The still-image is saved in JPEG format, which can be transferred to another computer or e-mailed as an attachment.



Screen 4: The Playback selection screen displays thumbnails of the still images, or videos you shot. Tap on the thumbnail and display the still image, or run the video.

The still-image JPEGs varied in size from about 50Kb to 125Kb, depending upon the level of compression you select. The camera card doesn't appear to draw very much power from the E-100/105. I never got a "low battery" message. The number of JPEGs and the number and length of the videos you can take depends entirely on the amount of free internal storage space. And since the camera card occupies the Compact slot, you can't use an additional CF storage card at the same time.

The video recorder also has a Playback selection screen, displaying still thumbnail images of the video. Tap on the desired thumbnail and the Mobile Video Player opens (see Screen 6). You can play the video, fast forward or reverse, adjust the volume of videos with audio, and more.

The Casio Digital Camera Card is fun! The first day I had it I went around taking "interesting" pictures and videos of the people at work. I ended up in the town square and took a video of some children playing on the bandstand (see Screens 5 & 6). Unfortunately, I can't show you the video on this printed page. I'll try to have something for the Web version of this article, but there may be a problem with that. The Casio video recorder saves the movie in Casio's propri-

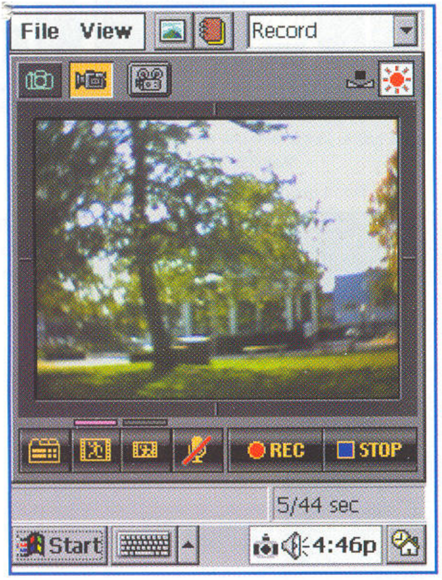
## Spec Sheet

### Casio Digital Camera Card – $299

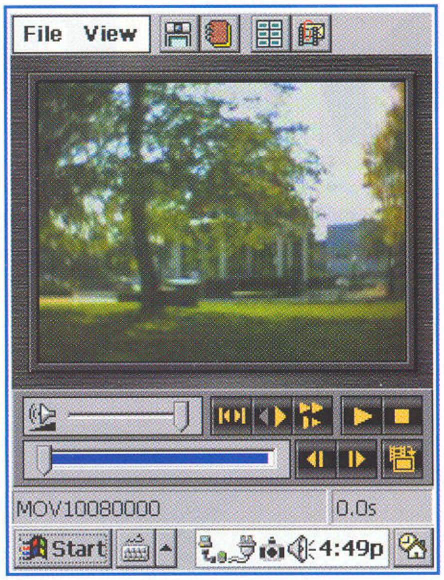
| | |
|---|---|
| Contact | www.casio-usa.com/hpc/ |
| Weight | 1.6 oz |
| Works with | Cassiopeia E-100 & E-105 Palm-size PC only |
| Power | Draws power from P/PC – 45 min. of continuous use per charge |
| Recording modes | Still image, Continuous Image, Movie |
| File save formats | Still: JPEG (640x480, 3 compression levels); Movie: CMF (Casio Movie Format – based on MPEG1 standard; CMF player for PC is available) |
| Storage capacity | The number of still images and the number and length of the CMF movies depends on the internal file storage space available on the E-100/105. Camera Card occupies CF slot. |
| Technical Specs. | CCD: 350,000 pixels; Lens: Fixed focal point with macro position F2.8; Focus range: Normal – 30.7in., Macro – 3.9in.; Shutter speed: 1/30 – 1/1000 sec. |
| *Comments:* | *Lightweight (1.6 oz); Camera lens rotates 180 degrees and automatically changes* orientation; Movies and still images can be attached to e-mail |

### Cassiopeia E-100 Palm-size PC — $499

| | |
|---|---|
| Contact | www.casio-usa.com/hpc |
| **Hardware** | |
| CPU | 133 MHz MIPS |
| Display | 3.9" diagonal 240x320 65K color backlit touchscreen |
| Memory (in MB) | 32 RAM/ 16 ROM |
| Communications | None |
| External ports | Serial; fast IrDA; headphone jack |
| Card slots | One CF Card |
| *Power* | *Lithium-Ion (6 hr per charge); AC adapter* |
| Dimensions / Weight | 5.11 x 3.26 x 0.8 in / 9 oz |
| Other features | Microphone, speaker, rocker button on front |
| Accessories, standard | none |
| Options | Cases, CF Cards, Stereo earphones, Stereo headphones, spare battery, Stylus/Pen combo. |
| **Software** | |
| Operating System | Windows CE 2.11 |
| Built-in MS apps. | Palm-size PC Pocket Outlook, Mobile Channels, NoteTaker, accessories and set-up utilities. |
| Add-on software (built-in/CD ROM) | From Casio: Multimedia Pack (Movie Converter, Mobile Video Player, Mobile Audio Player, Image Viewer, Palm Golf ), CF Backup, Menu. From 3rd Party: PalmPilot data converter, Audible Player, AvantGo, |
| Comments | The combination of the Compact Digital Camera Card, the Stereo Headphone Jack, and th *Multimedia Pack make the E-105 and E-100 the premiere multimedia Palm-size PCs.* The Multimedia Pack is included with the E-105 and an option with the E-100. |



Screen 5: Mobile Camera's video recorder lets you adjust the size of the video, turn the sound on and off, and record videos.



Screen 6: The Mobile Video Player lets select and play your recorded videos, fast forward and reverse, adjust the volume of videos with audio, and more.

etary CMF format. The Mobile Video Player that comes with the Mobile Camera can display CMF movies. Casio even provides a CMF player for your desktop PC. But I don't know of any way to convert CMF files to the more popular and common MPEG format. Casio includes a converter, but it only works one way – from other video formats to CMF. I attempted to play one of the CMF files with Real Player Plus on my desktop PC, but it wouldn't work and RealNetwork's doesn't have a plug-in for CMF files – yet!

### If a picture's worth a thousand words, what's a video worth?

The Digital Camera Card's video record feature is fun but is it practical? Well, if a picture's worth a thousand words, what's a video worth? Say I'm a real-estate agent trying to interest an out-of-state client in a house. I could e-mail the prospect a video walk-through of the house. Or maybe I'm trying to describe the way something works to someone (like I do in reviews all the time). I could record a short video, or a series of short videos to do the job. Finally, what if I want to send my brother a picture of his niece and nephew. Why not send him a video with them saying, "I love you Uncle Dave?"

The truth is, if these videos are taken with the Digital Camera Card and saved in Casio's proprietary CMF format, Uncle Dave won't be able to play them. Even if I sent him the desktop PC version of the Casio Movie Player (which would violate the software license), my brother has an Apple Macintosh which "doesn't do PC." It would be so much easier if the video recorder saved its videos in MPEG (like the camera saves its stills in JPEG). A reasonable compromise would be to enhance the desktop PC video converter so that it translates to and from CMF.

I'm keeping the E-100 and Digital Camera Card long enough to take it with me to COMDEX (the computer industry's premier trade show). I'll use the still-image camera to take pictures of people and products. I intend on seeing if there's anything at a trade show in Las Vegas that's worth a video.

### Final verdict: "Way cool!"

The Digital Camera Card can physically slip into any CompactFlash slot, but you need Casio's Mobile Camera software to use it. So far, that piece of software only works with the E-100/105. The Casio Digital Camera Card is priced at $299 and will be available through regular Casio distribution channels. For online purchases, go to Casio's Online Store (access at the bottom of the page at www.casio-usa.com/hpc/) or Mobile Planet (www.mobileplanet.com).

My 13-year-old son took a look at the Cassiopeia E-100 Palm-size PC and Digital Camera Card, shot a couple videos, and judged it "Way cool!" I have to agree with him. The Cassiopeia has a bright color screen that displays 65,000 colors. It fades out in bright sunlight, but is great otherwise. It has a stereo headphone jack and the Multimedia Pack that comes with the Digital Camera Card includes the Mobile Audio Player that plays MS Audio Files. If you want to play MP3 on the Cassiopeia, Utopiasoft's Hum player does the trick. The Digital Camera Card, with still-image and video recording, is the icing on the cake. ■

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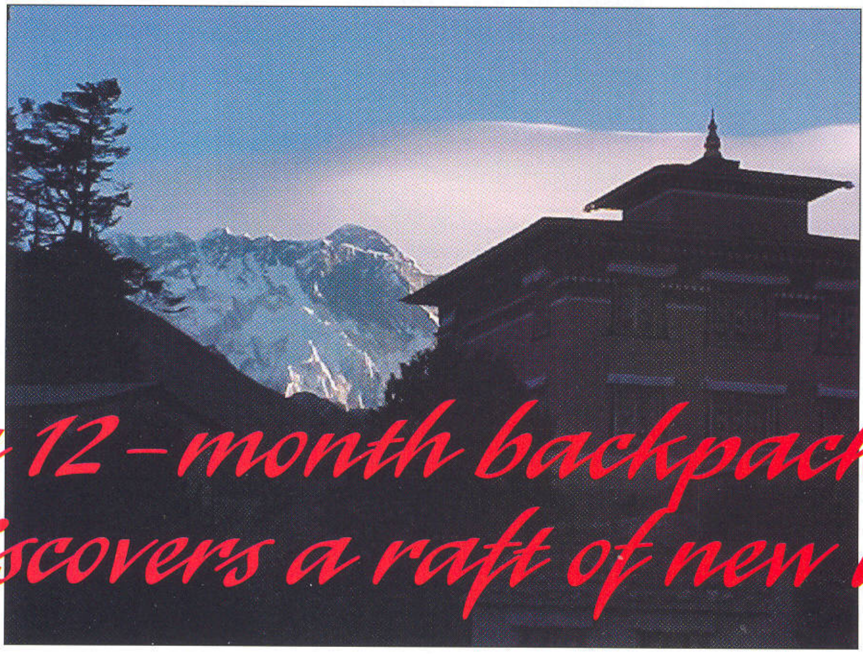
# Boots, a Backpa



We stopped for a day's rest at Tengboche Monastery, 13,000 feet up in the Himalayas and one of the most spiritual places on the planet.

## *On a 12-month backpacking jour*
## *discovers a raft of new uses for*

### BY MARK VIRTUE

At Tengboche Monastery we declared a rest day. We were thirteen thousand feet up in the Himalayas — we felt we deserved it. Four days ago we had left bustling, chaotic Kathmandu, at a somewhat healthier four thousand feet, and we were now starting to feel a little shaky with the altitude. Two days further up the trail was Everest Base Camp, the Holy Grail of Himalayan trekking, but, sadly, it didn't figure in our plans. "Next year," promised my friend and traveling companion Greg.

If Tengboche isn't situated on the most spiritual point on the planet, I'll eat my boots. It's surrounded on all sides by impossibly high mountains, uplifting and humbling the soul — a perfect place for a monastery. To the north, Sagarmatha (Mount Everest) presides over all, silently and implacably, an irresistible magnet for the eyes. Ama Dablam, smaller, but arguably the most gorgeous mountain on the continent, sits regally off to the right.

I sat on a rock, immersed in the spirituality that only truly huge scenery can inspire. In half an hour the sun would set behind Cho Oyu, at which time I knew from experience that the temperature would plummet dramatically. Perched on my lap was my trusty HP 620LX Handheld PC, poised ready to capture any thoughts that the mountains might evoke.

A trekker walked past, alone and carrying his own pack. Impressive, I thought, considering how easy it was in these parts to find a porter that would carry your gear for two dollars a day. I waved a friendly greeting at him.

"Hi," he called back, and then stopped and did a double-take. He turned and walked over. "Excuse me," he said, with a faint German accent, and indicated my palmtop. "Is that a computer?"

"Sure is."

"But it's so small! It's really a proper computer?"

I decided that a dissertation on the subtle differences between Windows 95 and Windows CE could wait for another day. "Uh-huh."

"Amazing." Then he paused, as if trying to think how to frame a question. "Um, can this computer of yours send e-mails?"

# ck and My H/PC

ney around the world Mark Virtue
his indispensible Handheld PC.

Again, the simplest answer was, "Yes."

He asked me if he might be able to borrow it to write an e-mail, and whether I might do him the favor of sending it when I returned to civilization. I told him that I'd be glad to, but that I wouldn't be anywhere near the Internet for another two weeks. Apparently, this was no problem — he wasn't planning to return himself for at least three more months.

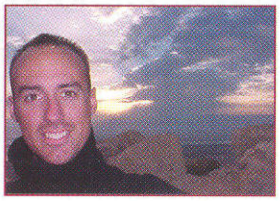
I handed over my 620LX and left him happily pecking away at the keyboard while I went off to have some tea. I smiled to myself. Who would have thought a Handheld PC would find such a use up in the highlands of Nepal?

### A shame to leave it behind

When I left Australia for Nepal in November 1998, I'd seriously considered not taking my new HP 620LX. I imagined traveling in constant fear of losing my new toy, or having it stolen. Besides that, what possible use would a computer be to a footloose adventurer like me? True, the 620LX's built-in Contacts manager would make it easier to keep in touch with friends. The World Time application might help me keep track of changing time zones. And I supposed that currency conversions would be marginally easier using the built-in calculator. But that was about it. I could certainly do without a Calendar and Tasks list - after all, I was leaving Sydney to get away from exactly those kinds of things.

On the other hand, ever since I bought it, the 620LX had proven itself indispensable in my daily life, and I thought it would be a shame to leave it behind. As it turned out,

*Here I am hitchhiking (in Israel this time, not Nepal). While waiting for a ride I had a chance to catch up on a little e-mail with my HP 620LX.*

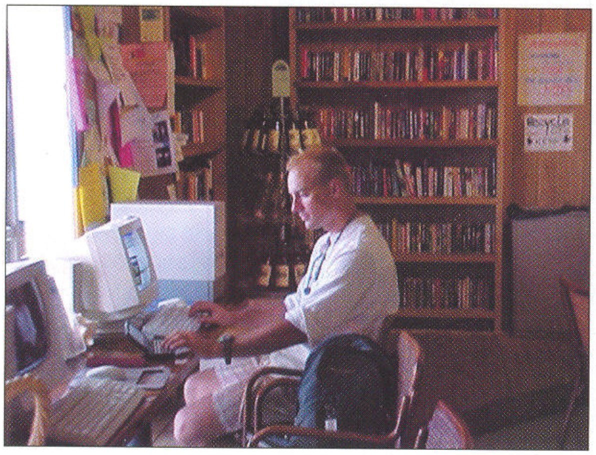


Mark, 34, is from Sydney, Australia, where he spent most of the last ten years bouncing around the computer industry - programming, training and everything in between. Upon realizing that computers would be unlikely to sustain his interest as a career for the rest of his life, he set off on a twelve-month backpacking journey around the world in search of a new direction. Curiously, he took his new HP 620LX with him. Mark can be reached at: mvirtue@zip.com.au.

taking it with me was one of the best decisions I've ever made. In six months of travel, far away from the alarm clocks, traffic jams and business lunches of my old life, I've discovered a whole raft of new uses for this marvelous device.

## E-mail is my lifeline

As a backpacker, e-mail is as important to me as air. I have no fixed postal address, no phone number and no fax machine. E-mail is my lifeline to the ones I love and the only way I have of keeping in touch with the rest of the world. The HP 620LX has a fully-functional e-mail program called Inbox. It doesn't have a built-in modem like the newer HP Jornadas, but you can get PC Card fax/modems for the 620LX. Yet I deliberately didn't bring one – where would I plug it in? There aren't an abundance of telephone jacks on the trail or in your average youth hostel, where I sleep most of the time. Worse than that, an Internet Service Provider account equipped with global roaming is out of my budget.


Here I am working at a Cybercafé computer with my 620LX. The cafe is the Grateful Deli, a combination Cybercafé and bookstore on St. Thomas in the U.S. Virgin Islands.

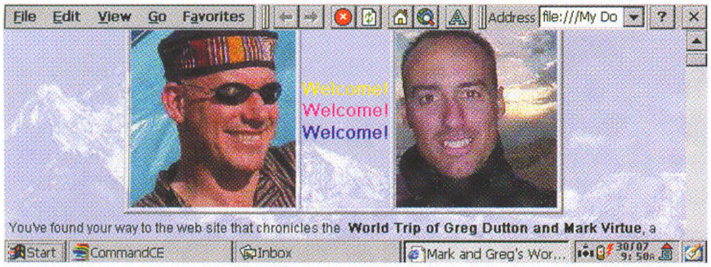
Fortunately, "Cybercafés" are multiplying around the planet faster than rabbits. These coffee-shops-with-computers offer Internet-enabled computers to the general public, usually for $2-$10 per hour. They are available in virtually every country in the world, including Tibet, and are used extensively by backpackers, often as their sole means of communication. If you're a typical business traveler, $10 per hour may seem cheap, but when you consider that $8 is the average price I pay for a night's accommodation, and that I probably spend at least eight hours a week reading and writing e-mails, those small hourly charges would rapidly add up to become my most significant traveling expense. I wanted to be able to write everyone I love and still have enough cash left over to eat.

The solution was to use the Cybercafé computer only for the uploading and downloading of the e-mail. The reading, writing and responding to the messages was done offline on my H/PC, in the comfort of the hostel common room (or the discomfort of the bus). I wrote the e-mail messages using Pocket Word. Then, when I got to a Cybercafé, I transferred the Word documents to the desktop computer, copied and pasted the composed messages from Notepad into Hotmail, and sent them. Any messages I received got the reverse treatment, and I read them later (when I wasn't paying for connect time). I could send or receive a couple of dozen lengthy e-mails in about 15 minutes of on-line time, costing me usually no more than a couple of dollars.

The tricky part was getting the documents to and from the Cybercafé computer. I carried my serial connectivity cable with me, so there was no problem physically connecting the 620LX to the café computer, but it was clearly impractical to go around installing Windows CE Services on every computer I used. I solved the problem by using two utility programs I found on the Net. The first (WCEFiler) is a tiny, freeware CE program that lets any Windows CE H/PC (not just Hewlett-Packards) pretend that it's an HP 200LX Palmtop PC for the purposes of communications. (The 200LX is an older, DOS-based handheld.) The second (HP Transfile) runs on any Windows 3.1, 95, 98 or NT computer, and is used to exchange files between the desktop PC and an HP 200LX Palmtop (or any handheld pretending to be a 200LX). It was a simple matter of connecting the two computers, slipping the floppy into the Cybercafé computer's floppy drive, and running HP Transfile. *[NOTE: Links to these two programs and details for using them are available on Mark's Web site, at www.zip.com.au/~mvirtue/ trip/howto.html.]*

It might sound like a lot of mucking around just to get a couple of e-mails transferred, but it's actually very simple to use these two pieces of software. And, considering that I regularly back up all my important H/PC files onto the Net, this technique has applications that go well beyond e-mail.

If you find Windows CE Services overkill, or if your desktop PC doesn't support it (i.e., if you still run Windows 3.1 on your computer), this is an excellent way to handle file transfers. It's certainly simpler than carrying the Windows CE Services CD around and installing (and deleting) it wherever you go.



You've found your way to the web site that chronicles the **World Trip of Greg Dutton and Mark Virtue**, a

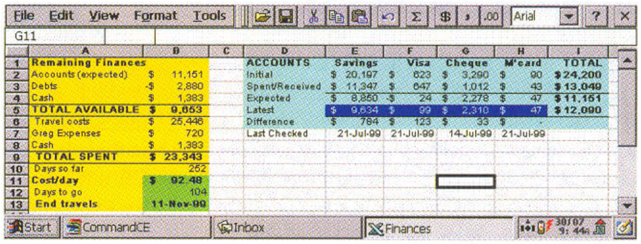
The home page of a Web site I maintain about my travels, as displayed on my 620LX. Every word on the site is composed on my 620LX. Images are taken by a Sony Mavica digital camera. I create the HTML pages on a Cybercafé computer and download them to my Web site via e-mail.

### A traveling Web master

I maintain a Web site about my travels for my friends and family back home (located at: www.zip.com.au/~mvirtue/trip/). I didn't plan to do this; it just evolved as the most logical way to stay in touch. I only have to describe my travels once, rather than writing to each person at home individually. The site is certainly not an expensive, professional work of art, but it's better than most amateur hack-fests I've seen. Every word on the site was written on my H/PC in Pocket Word, then copied over to a Cybercafé computer as described above. I used MS FrontPage Express or the ubiquitous MS Word 97 on the Cybercafé computer to convert the text into HTML and upload it to my Web site. All photos on my Web site and in this article were taken with a Sony Mavica digital camera. It has the staggeringly useful feature of using standard floppy disks to store the images. This makes it easy to store and transfer images to the Cybercafé computer. I've used it to illustrate the Web site with several hundred photos; everything from the Pyramids to the London Underground.

I've also used Pocket Excel to create an inventory of everything that I'm traveling with (for insurance purposes); a list of all the books that I've read on the trip; and a fairly sophisticated spreadsheet for tracking my expenses and the balances of my bank accounts and credit cards. I've even found a use for the voice recorder - capturing the occasional interesting sound for my Web site. (For example, one of our porters in Nepal was fond of this little tune called "How I love to live in Kathmandu, yeah!" Find it at:

www.zip.com.au/~mvirtue/trip/set2/030
_Our_coolest_porter_Ita_Lama_sings.wav

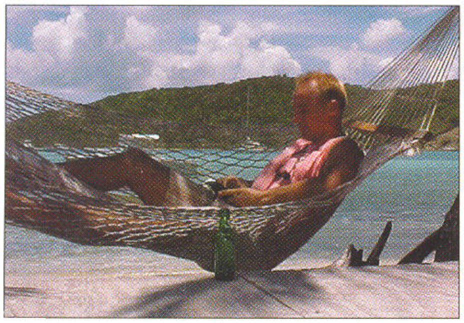


| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | **Remaining Finances** | | | **ACCOUNTS** | **Savings** | **Visa** | **Cheque** | **M'card** | **TOTAL** |
| 2 | Accounts (expected) | $ 11,151 | | Initial | $ 20,197 | $ 623 | $ 3,290 | $ 90 | **$ 24,200** |
| 3 | Debts | -$ 2,880 | | Spent/Received | $ 11,347 | $ 647 | $ 1,012 | $ 43 | **$ 13,049** |
| 4 | Cash | $ 1,383 | | Expected | $ 8,850 | -$ 24 | $ 2,278 | $ 47 | **$ 11,151** |
| 5 | **TOTAL AVAILABLE** | **$ 9,653** | | Latest | $ 9,634 | $ 99 | $ 2,310 | $ 47 | **$ 12,090** |
| 6 | Travel costs | $ 25,446 | | Difference | $ 784 | $ 123 | $ 33 | $ - | |
| 7 | Greg Expenses | $ 720 | | Last Checked | 21-Jul-99 | 21-Jul-99 | 14-Jul-99 | 21-Jul-99 | |
| 8 | Cash | $ 1,383 | | | | | | | |
| 9 | **TOTAL SPENT** | **$ 23,343** | | | | | | | |
| 10 | Days so far | 252 | | | | | | | |
| 11 | **Cost/day** | **$ 92.48** | | | | | | | |
| 12 | Days to go | 104 | | | | | | | |
| 13 | **End travels** | **11-Nov-99** | | | | | | | |

Here is a fairly sophisticated Pocket Excel spreadsheet I've created to tracking my expenses and the balances of my bank accounts and credit cards.

The desire to get off the beaten track and the need to have a constantly charged battery in my computer were often mutually exclusive. Having a universal plug adapter solved the issue of socket compatibility, but finding a power socket in the wilderness or in the Third World was often problematic. There was no true solution to this — it was simply necessary for me to ease off on the use of my 620LX during the weeks away from civilization — always difficult for me.

Sitting in a café in the Virgin Islands watching as the sun sets over the Caribbean and writing this article on my 620LX.



### And as the sun sets over the Caribbean...

After leaving Kathmandu and the foothills of Mount Everest, my travels have taken me backpacking through Tibet, Egypt, Israel, England, Ireland, the United States, and now to the Caribbean. The 620LX raises eyebrows everywhere I go. Right now I'm sitting in a café in the Virgin Islands watching the sun set over the Caribbean and writing this article on my 620LX. Occasionally someone walks past and says, "Hey, you're not supposed to bring your work with you to a place like this!" I try to explain that I'm not working, but it never comes out right. ■

# ActiveSync 3.0... a Big Improvement

## *Microsoft's ActiveSync 3.0 provides improved synchronization services for your Windows CE PC Companion.*

**BY CRAIG PEACOCK**

Along with each PC Companion, Microsoft provides a copy of Windows CE Services. This desktop PC program lets you swap files and synchronize data between your desktop PC and PC Companion. Microsoft has included this program ever since the first Handheld PC shipped in late 1996. And ever since then, PC Companion users have been crying out, "There's got to be an easier way to synchronize this thing."

### NT-friendly ActiveSync 3.0

Windows CE Services has been a particular headache for users of Windows NT desktop PCs. While CE Services 2.2 fixed this problem for many NT users (myself included), a quick look through the Windows CE newsgroups tells you that it didn't fix it for everybody.

Fortunately, ActiveSync 3.0 is a big improvement, especially for NT users. In less than 10 mouse clicks I installed it on my Windows NT test machine, configured the synchronization options, and synchronized data with a Casio E-105 Palm-size PC. One of the more annoying things about previous versions was the necessity of re-booting the desktop two or three times during installation. I didn't have to re-boot once during installation to a clean NT machine (i.e. one that had never had Windows CE Services installed on it). However, when I tried upgrading an NT computer that already had CE Services 2.2 installed, I had to reboot.

Previous versions of Windows CE Services (2.0-2.2) relied on a service called RAS (Remote Access Service) which operated in the background and caused some problems.

Dial Up Networking (DUN) was the source of the "every time I connect my device, IE wants to log on to my ISP" problem prior to the bug fix that shipped with IE5. Once Microsoft Engineers decided not to continue using Remote Access Service and DUN as the primary connection method, implementing auto-baud detection was possible, hence with ActiveSync 3.0 much faster connections are possible.

Using RAS meant that you had to restart your PC up to three times during installation. In addition, it wasn't easy to change

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Craig is a regular contributor to Handheld PC Magazine. He also maintains and writes for two of the most popular Windows CE Web sites: www.palmpc.org.uk for Palm-size PCs and www.craigtech.co.uk which has over a 1,10 Windows CE Links. He has just published Windows CE Made Simple (Europe) and Windows CE Clear and Simple (USA) both published by (Butterworth Heinemman, www.bh.com) and is a regular contributor to the PC Plus Magazine (www.pcplus.co.uk).

the default communications speed between the two devices. Finally, RAS was a major plague for IT departments. To synchronize with NT desktop PCs, the IT department had to change user permission settings (i.e. they specify system resources a particular user is allowed to use). The problem was that some of the necessary changes were against IT policies in particular companies. ActiveSync 3.0 does not use RAS and most of those problems are gone. We tested this by setting up an ActiveSync users on our in-house NT network. It was easy and it worked without a flaw.

### Change default communications speed easily

It had been difficult to change the default communications speed on previous versions of Windows CE, so we tested Active Sync 3.0 to see if it was any better. All we had to do was unplug the Casio E-105 Palm-size PC from the docking cradle, tap Start, Settings, Communications, PC Connection, Change Connection and then select Serial@115k from the drop-down list. We placed the Casio E-105 back in its docking cradle and it connected to our NT 4.0 machine at 115k! We didn't have to change anything on the PC – it just worked! (Not all PCs support 115k so if 115k doesn't work for you then try it at 57,600.)

The user interface of ActiveSync 3.0 has been made much simpler. The screen shows the last device connected, when you last synchronized with your PC, and which applications you are currently synchronizing with. When a synchronization is taking place, the estimated time left, errors or conflicts, and other information is displayed.

### Worked well with all PC Companions

We tested ActiveSync 3.0 on Windows 98, Windows 2000 (RC 2) and Windows NT machines, synchronizing them with a variety of PC Companions (Sharp, HP, Casio), using Serial, Infrared and Ethernet connections. The Windows NT 4.0 computer had Service Pack 5 installed. ActiveSync 3.0 worked flawlessly in all cases. [Note: ActiveSync 3.0 does not work with Windows CE 1.0 Handheld PCs.]

However, a quick look around Windows CE newsgroups reveals that a few people are have problems with ActiveSync 3.0. They seem to be associated with the use of third-party add-ons to the desktop PC version of MS Outlook, and to applications written to synchronize with the PC Companion using Windows CE Services 2.2. If you have problems, check with the vendor of the problem software to see if they have an update that works with ActiveSync 3.0.

ActiveSync 3.0 is available for free on Microsoft's Windows CE Web site (see contact below). Microsoft indicates that if you don't want to spend the time downloading the program, you can order it on CD-ROM, which also includes MS Internet Explorer 5.0, Microsoft Schedule Plus 7.0a, Y2K fixes, and Microsoft Pocket Streets with USA maps. Unfortunately, the CD-ROM is only available in the U.S. at this time.

ActiveSync 3.0 is a big improvement on previous versions of Windows CE Services. HP is shipping it with their new Jornada 430se Palm-size PC. But as I mentioned, it's available online for free. For more information on ActiveSync 3.0, or to download a free copy, go to www.microsoft.com/windowsce/activesync. This page contains links to the system requirements, and the downloads for English localized (non-English-language) versions of ActiveSync 3.0. ■

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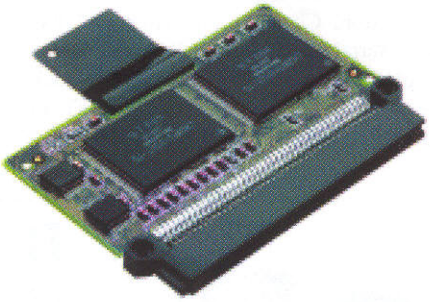
# HP Gives New Life to the 620/660LX

## *HP's 600 Series ROM Upgrade Module turns the venerable 620LX and 660LX Palmtop PCs into Handheld PC Professional Edition computers.*

Hewlett-Packard's 620LX or 660LX can be upgraded to an H/PC Pro with the HP 600 Series Upgrade Module.



**BY EDWARD ZABREK, M.D.**

In the world of computer technology, promises of upgrades are met with suspicion. Introduction of the upgrade always seems to be delayed, and when you finally get the new and improved product, it rarely lives up to the hype. Fortunately, this is not the case with the HP 600 Series Upgrade Module. This is one of those rare exceptions that truly gives you a big bang for your buck.

In its time (last year, that is) the HP 620LX was the best Handheld PC around. But then HP came out with their new 680 Jornada. It was about the same size as the 620LX, but came with a better keyboard, built-in 56k modem, and a faster processor. Best of all, it had the newer H/PC Pro set of built-in applications, including Pocket Access and improved versions of the others.

I upgraded to the 680, but with a little reluctance. You see, there are many features of the 620LX (and 660LX) that I actually like better than the Jornada 680. For one, the 620 has a slightly larger and more readable screen. It also has larger and easier to access shortcut keys. Finally, I'd already adapted to its keyboard and found it quite useable. (See my review of the Jornada 680 on page 8 in the July/August 1999 issue of *Handheld PC Magazine*.)

### Time to dust off that old 620LX

When I heard that HP was offering 620/660LX owners a way to upgrade their devices to H/PC Pro status I pulled out my 620 LX, dusted it off, and bought the HP 600 Series ROM Upgrade Module.

The ROM Upgrade Module is a small, easy-to-install ROM board that slips into the 620/660's ROM expansion slot. First, back up your 620/660 onto your desktop PC (your device will lose ALL of its data). Then pull out the old ROM module (just under the main battery), and plug in the new one. Restore the data you backed up and your ready to go. It's that easy.

This upgrade module turns your 620/660LX into a full-fledged Handheld PC Pro with all of the great "Pro" features and software enhancements including the Pocket Access database application. It addition, the ROM Upgrade adds the special applications created by HP for the Jornada 680. These include HP Backup and restore, HP Dialup, HP Quick Pad, HP Viewer, HP Hot Keys, HP Settings, and HP Macros. (See page 12 of my review of the Jornada 680 in the July/August 1999 issue for a complete description of these HP applications.)

On top of all of these enhancements, 620LX users get an additional 16Mb of internal RAM (total of 32Mb) for running programs and storing data. The HP 660LX's 32Mb of existing RAM is not increased. The module also converts both devices from a 256 color to a 64k color screen. (Note: Existing Jornada 680 owners can update their screens

Ed is Medical Editor of Handheld PC Magazine, a practicing obstetrician-gynecologist in Houston, Texas, and chief technology correspondent for OBGYN.NET (www.obgyn.net), a Web site for obstetricians, gynecologists, and related industry persons.

to 64k colors by installing a software patch available for free download on HP's web site at: www.hp.com/cposupport/handheld_computers/software/680ddi64.zip.html.)

### Hats off to HP

The 600 series ROM Upgrade Module turns an already excellent H/PC into a far-better-than-average H/PC Pro – and one that still fits in your pocket. I won't give up my Jornada 680, but I now have a very nice back up H/PC Pro, and one that I can use interchangeably with the 680 when I don't need a modem.

The HP 660LX shipped with a PC fax/modem card and many 620LX users purchased one. If you're in this category and have been eyeing a 680 Jornada, remember that the ROM Upgrade Module costs $179 and a new Jornada 680 costs $900 (minus a mail-in rebate of $75, both available through HP dealers or at the HP Online Store: www.shopping.hp.com). You might consider saving some money, especially if you're satisfied with the physical aspects of the 620/660LX.

If you don't own any of the 600 series at this time, but are thinking about buying one, you're probably better off with a 680LX. The keyboard in particular is worth the added cost. However, there is another way to get a relatively inexpensive Hewlett-Packard H/PC Pro. That is to purchase a used or closeout 620/660LX and upgrade it with the ROM Upgrade Module. HP's Online store is selling a combination package including a 620LX and the ROM Upgrade Module for $659. A similar package including a 660LX and the ROM Upgrade Module goes for $759. If such a deal tempts you, make sure to check out the Jornada 680 before making your final purchase.

My hat's off to HP. Not only for this very worthwhile upgrade, but also for consistently providing upgrade modules for their PC Companions when improvements are made to Windows CE and the built-in software. This is one company that I can depend on to keep their products going, and going, and going… ■

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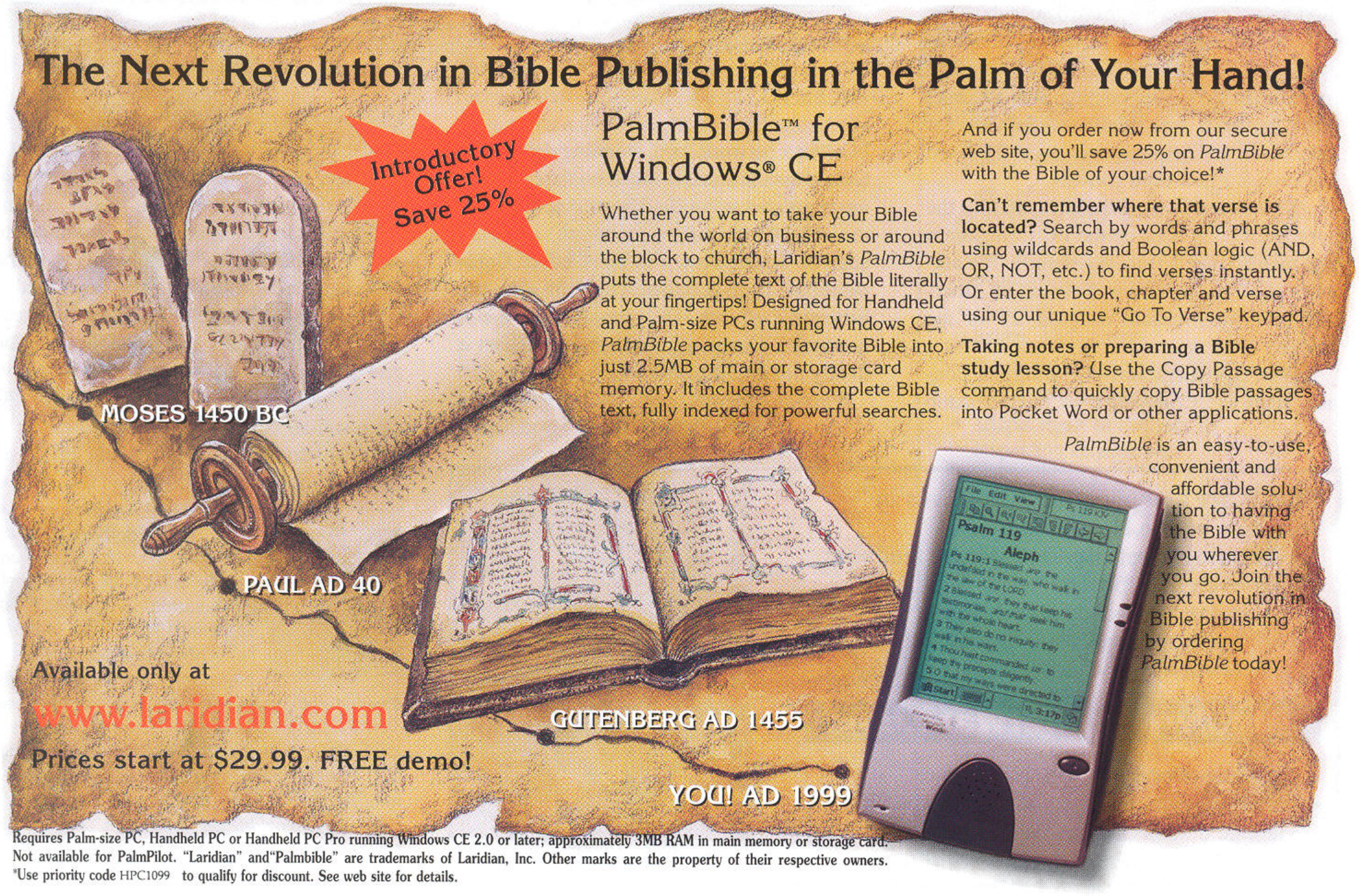

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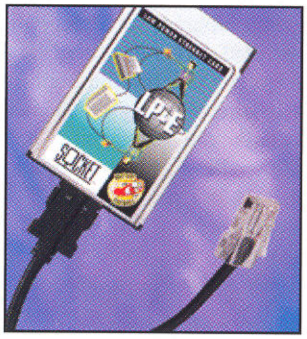
# Ethernet Card Shootout

## *Speed versus Usability: Using Ethernet Cards to speed up the PC Companion to Desktop PC connection.*

**BY CHRIS DE HERRERA**

Ethernet is normally used to connect many personal computers together, allowing them to communicate and share information. But it can work with as few as two computers if each has an Ethernet adapter (or port). With Ethernet capability, a user can connect his or her PC Companion to a desktop PC and transfer or synchronize data at much higher rates (10 megabits per second). Inexpensive Ethernet adapters are available for desktop PCs. In fact, more and more desktop PCs are coming with Ethernet adapters built in. Ethernet adapters for Windows PC Companions come in PC Card or CompactFlash Card formats.


Socket's Low Power Ethernet PC Card lets H/PC and H/PC Pro users connect to a 10BaseT network.

Xircom's CompactCard Ethernet 10 lets PC Companion users connect to a 10BaseT network.

The user slips the Ethernet card into the appropriate card slot on the PC Companion and then connects it to any point in the network. (For more information about Ethernet, see Chris' article on page 29 of the Jan/Feb 99 issue.)

With this users have the ability to connect their PC Companion to their desktop PCs via a network card, enabling data transfer and synchronize at much higher rates (10 megabits per second). To accomplish this, the PC Companion needs an Ethernet adapter, which comes in PC Card or CompactFlash Card formats. The user slips the Ethernet card into the appropriate card slot on the PC Companion and then connects it to any point in the network.

For an Ethernet card to be recognized by a PC Companion the user must first install a software driver for the card. Drivers are small software programs that "teach" a computer how to recognize and communicate with a specific peripheral - in this case the Ethernet card. Microsoft has developed a generic NE-2000 software driver for these cards. It ships with every PC Companion and is found on the ActiveSync (Windows CE Services) CD that comes with each PC Companion. Note: The H/PC Pros have the NE-2000 driver in ROM. The 2.11 P/PCs do not have an NE-2000 driver and the version

*Chris (TechEd@CEWindows.net) is a special correspondent and contributing author for* Handheld PC Magazine. *He maintains one of the best Windows CE Websites (www.cewindows.net/). Chris is a Microsoft Comm Link columnist covering communications and Windows CE issues on Microsoft's Windows CE Web site. Chris is a Microsoft Most Valuable Professional for Windows CE and writes articles on Windows CE for his own Website and for other mobile computing publications. Chris regularly participates in chats on the Microsoft Network and various newsgroups (including Microsoft.public.windowsce).*

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# PC/CF Card Ethernet Adapter Cards for PC Companions

The PC/CF Card Ethernet adapters listed below work with PC Companions using the Windows CE operating system. They will also work with Windows 95/98/NT notebook PCs with PC Card slots. PC Card Ethernet adapters can be used in Windows CE 2.0 PC Companion with the larger Type II PC Card slot but cannot fit in the smaller CompactFlash slots found on Palm-size PCs. CompactFlash Ethernet adapters will work in the Compact slots found in Palm-size PCs and H/PC Pros. With the help of a CF-to-PC-Card adapter, they will also work in the PC Card slot of an H/PC.

**AmbiCom PowerSaver Ethernet PC Card** — an Ethernet adapter in PC Card format that connects to a 10 Base-T; $na. Contact: AmbiCom; Phone: 888-AMB-3933; Fax: (408) 727-6966; E-mail: info@ambicom.com; Web: www.ambicom.com.

**Kingmax Ethernet Adapter Card** (not tested) — an Ethernet adapter in PC Card format that connects to a 10 Base-T or 10 Base-2 network. $na; Contact: Kingmax; Phone: 909-454-9888; E-mail: kingmax@kingmax.com; Web: www.kingmax.com.

**Pretec Ethernet CompactLAN Card** — an Ethernet adapter in a PC Card format that connects to 10Base-T or 10Base-2 network; $62. Ethernet T/2 PC Card — same as above in PC Card format; $62. Contact: Pretec Electronics Corp; Phone: 510-440-0535; E-mail: info@pretec.com; Web: www.pretec.com.

**Silicom Ethernet PC Card** (not tested) — an Ethernet adapter in a PC Card format that connects to a 10BaseT network; $84.90. Contact: Silicom Inc; Phone: 201-529-1121; E-mail: sales@silicom-usa.com; Web: www.silicom-usa.com.

**Socket Low Power Ethernet PC Card** — An Ethernet adapter in a PC Card format that connects to a 10BaseT network; $129.95. Low Power Ethernet Plus PC Card — an Ethernet adapter in a PC Card format that connects to a 10Base2/10BaseT network; $159.95. Low Power Ethernet CF+ Card - an Ethernet adapter in the CompactFlash format that connects to a 10BaseT network. $129.95. Ruggedized versions also available. Contact: Socket Communications Inc; Phone: 800-552-3300; E-mail: info@socketcom.com; Web: www.socketcom.com.

**TDK MobileNetworker CE** — an Ethernet adapter in the PC Card format that connects to a 10 Base-T network; $99. TDK CF LAN Card — No details available. Contact: TDK; Phone: 800-999-4TDK; Web: www.tdksystems.com.

**Xircom CompactCard Ethernet 10** — an Ethernet adapter in the CompactFlash format that connects to a 10Base-T network; $149. Contact: Xircom; Phone: 800-438-4526; Web: www.xircom.com.

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on the CD is not compatible. Right now Pretec's CompactLAN card does not provide 2.11 drivers. Most of the cards I tested used this generic driver. But some came with custom drivers developed by the card manufacturer. These tended to have more features than Microsoft's generic driver and the cards easier to use (see below).

### Similar performance with all cards tested

I conducted performance tests on a variety of Ethernet cards, using an H/PC Pro (Hewlett-Packard's Jornada 680) and a Palm-size PC (Casio's E-105). I used the Ethernet cards to connect them to my Pentium 233 MHz Windows 95 desktop PC, with no other devices attached to the desktop's hub. I found that synchronizing a 4 MB file via an Ethernet connection is over 15 times faster than using the serial port, regardless of the brand of Ethernet card being used. Further, synchronizing the data file was even faster when I used the Network Client which allows a user to access a network shared hard drive to copy the exact same file to the PC Companion using Ethernet. However, as fast as a Windows CE Ethernet connection is, Ethernet does not seem to perform to its maximum potential speed on Windows CE devices. The drivers are not optimized for threading, etc., like Win 95/98/NT drivers.

### The difference: software drivers

While Microsoft provides generic software drivers for most of these cards, I was more impressed with the customized drivers that shipped with Ethernet cards from Socket and Xircom. In fact, their software drivers make the Socket and Xircom cards the big guns in the *Handheld PC Magazine*, Ethernet Card Shootout.

Socket has added special features, including software-based connection and activity indicators that are displayed in the task bar. Socket cards also give you the ability to launch any application you want on your device after you insert your Ethernet card. All other Ethernet cards leave your device on until the shutdown times out each time it is turned on. If you use another Ethernet card, I recommend that you remove it from your PC Companion when it is not in use.

Xircom, new to Windows CE, has also added special features to its software. When you install the Xircom Ethernet Card driver, it offers you the option of automatically copying the TCP/IP settings from your desktop PC to your PC Companion. This makes the Xircom card a plug-and-play solution for synchronization. Also, Xircom's software lets you power-off its card when the cable is removed, so you won't run your batteries down by leaving the card in the unit. They don't affect the speed of the connection, but they add functionality.

### Recommendations

I did not find any significant speed-of-transfer differences between the Ethernet cards I tested. But as I mentioned, I liked the Socket and Xircom software drivers better. One difference I did notice was that CompactFlash Ethernet cards consume much less power than the larger PC Card versions. In addition, the CF format is far more flexible. You can use them in any Windows CE 2.0 Palm-size PC or Handheld PC with a CF slot. And with an optional CF-to-PC-Card adapter you can use any CompactFlash card in the PC Card slot of any Windows CE 2.0 H/PC. For these reasons, if you're considering an Ethernet card for your PC Companion, look at CompactFlash cards first. ■

## Windows CE Communications Performance Testing

### Tested with a Hewlett-Packard Jornada 680 Handheld PC Pro

Test file size: 4Mb

| Test/Card | Serial 115.2k base | AmbiCom AMB8010 | Pretec Ethernet T/2 | Pretec CompactLAN | Socket LPE-CF | Socket LP-E | TDK CF-LAN | TDK Mobile Networker | Xircom CompactCard E-10 |
|---|---|---|---|---|---|---|---|---|---|
| Ping (milliseconds) | n/a | 2 ms |  | 2 | 2 | 2 | 2 | 2 |  |
| 4 MB Activesync Transfer (min:sec) | 16:06 | :42 |  | :43 | :34 | :34 | :45 | :43 |  |
| 4 MB Network Client Transfer | n/a | :34 |  | :34 | :46 | :45 | :34 | :32 |  |
| Power (Lower is better) | n/a | 39 ma | 150 ma | 18 ma | 18 ma | 35 ma | not available | 45 ma | 23 ma |
| LEDs | n/a | None |  | None | Software |  | Link, Activity | Link, Activity in Card | Link, Activity |
| Windows CE Powered By Logo | n/a | Yes | No | Yes | Yes | Yes | No | Yes | No |

### Tested with a Casio E-105 Palm-size PC

Test file size: 4Mb

| Test/Card | Serial 115.2k base | Pretec Compact Lan* | Socket LPE-CF | TDK CF-LAN | Xircom CompactLan E-10 |
|---|---|---|---|---|---|
| Ping (milliseconds) | n/a | not tested | 2 | 2 | 2 |
| 4 MB Activesync Transfer (min:sec) | 14:10 |  | 1:14 | 1:13 | 1:13 |
| Power (Lower is better) | n/a | 18 ma | 18 ma | not available | 23 ma |
| LEDs | n/a | None | Software | Link, Activity | Link, Activity |
| Windows CE Powered By Logo | n/a | Yes | Yes | No | No |

** Pretec does not provide Windows CE 2.11 drivers with their card.*

# On Course With GPS

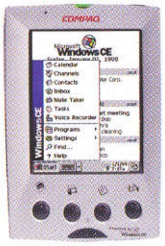
## *Using TeleType's GPS map software, a Garmin GPS receiver and a Compaq Aero 2100 Palm-Sized PC to get where you're going, without getting lost.*

**BY EDWARD ZABREK, M.D.**

Knowing where you are and where you're going is important in life. In fact, it's so important to the U.S. Government that they spent $10 billion developing the Global Positioning System (GPS; see sidebar, page 27). This expensive collection of satellites and ground stations makes it possible for anyone equipped with a GPS receiver to precisely know their position, along with their direction and speed if they're moving. Anyone with a GPS receiver can access the system to accurately track his or her exact location. The GPS data can even be overlaid in "real-time" on an electronic map for a precise, street-by-street representation of your location.

I live in Houston, Texas, and although I'm pretty familiar with my part of the city, large portions of it are foreign to me. I've always been intrigued by the idea of having a GPS-map system in my car to help me navigate. Such systems are available as expensive add-ons ($2000-$3000) to already-expensive luxury vehicles. In addition, Clarion markets the AutoPC; an in-dash Windows CE mobile computer with a GPS option. But the AutoPC costs $1,300 and the GPS option another $300 to $500 – still pretty expensive.

A third solution, and one that I've tried, is to use an inexpensive portable GPS receiver in conjunction with a Windows 95 laptop computer, a connectivity cable and automobile power adapter. Many portable GPS receivers come with a small, monochrome screen that can display data (latitude, longitude, altitude, etc.) as well as simple maps.



The Compaq Aero 2100 is a color-screen Palm-size PC with built-in productivity software. It can be connected to the Garmin GPS III Plus via serial cable and display map information using the TeleType GPS software.

The Garmin GPS III Plus is a standalone GPS receiver with its own monochrome display and batteries. It connects to a PC Companion via serial cable and displays map information on a PC Companion using the TeleType GPS software.

Using a GPS receiver with the laptop computer added a larger color screen, which improves usability greatly. It also allowed me to use more complex map display software. The GPS/laptop PC combination worked, but a quick stop meant the whole mess slid onto the floor. In addition, I was always worried about theft and the heat of a Texas summer damaging the equipment.

### Color-screen GPS solutions from TeleType

I've used PC Companions for some time now and have always been interested in a Windows CE solution. But the earlier H/PCs had monochrome displays and it's just to hard to read street maps on them. It's only been since the introduction of easy-to-read color-screen PC Companions that I've renewed my search, and looked again at the products of

Ed is Medical Editor of Handheld PC Magazine, a practicing obstetrician-gynecologist in Houston, Texas, and chief technology correspondent for OBGYN.NET (www.obgyn.net), a Web site for obstetricians, gynecologists, and related industry persons.

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# Other GPS Systems/Accessories

This review looks at one of the best color GPS solutions available for PC Companion users. There are other GPS solutions available, but few can display in color on a Windows CE device. Here are some places to look for GPS systems and map programs.

### GPS Systems

- TeleType Company (www.teletype.com) – offers a GPS receiver with PC Card interface for use in H/PCs, H/PC Pros and P/PCs. You also find other GPS-relate accessories.
- Garmin (www.garmin.com) – has a number of excellent GPS receivers that will work solo or with a PC Companion or laptop PC. Their Web site has a complete listing of their products, including their top-of-the-line Street Pilot Plus, a standalone GPS receiver that displays color maps. This is an excellent device, but priced at $700 it's a bit expensive.
- Peak Development (www.peak-development.co.uk) – offers the Marco Polo GPS Card in PC and CompactFlash formats for use with PC Companions. Peak also sells the TeleType GPS software with its GPS receivers.

### Mapping Software

- Microsoft (www.microsoft.com) – Microsoft Streets 2000 and MapPoint 2000 offer excellent, fully detailed color maps that can be easily exported to PC Companions running Pocket Streets. A free download of Pocket Streets is available at www.microsoft.com/expedia. These are great for map detail, but Pocket streets is not GPS enabled.
- Evolutionary Systems (www.evolutionary.net/) – offers HandMap Pro, a GPS-enabled electronic street directory that lets you zoom in and out and pan around looking at the map of the city or region installed. Maps displayed in color. HandMap is a shareware program and a download is available.
- InfoGation (www.infogation.com) – offers InfoGation Odyssey, a full-featured navigation system designed for the Auto PC. It allows a driver to view and track the car's location on an innovative map display, easily set a destination, and listen to spoken turn-by-turn route guidance with exact street names.
- Palmtop Software (www.palmtopsoftware.com) – offers Route Planner Millennium, a GPS-enabled Road Map and Route Planning application for any PC Companion. Provides you with the best route meeting your own personal criteria (Europe and North America). From destination to departure, through up to four stopovers.
- Adept Computer Solutions (www.streetwizard.com) – offers Street Wizard for CE in a desktop PC and Handheld PC version. The desktop application is a complete mapping product that lets you select the map areas you want to download to your Windows CE device. CD-ROM that includes street-level maps for the entire USA, except Alaska.

### Portable, external storage devices for your PC Companion

Maps are stored as graphics files, which can take up a lot of space on your PC Companion. If you need to take a number of maps with you, you should consider adding file storage capability to your PC Companion. I've already mentioned CompactFlash and PC storage cards. CF Cards come in capacities from 4MB up to 96MB (although 220MB versions have been announced). The larger PC storage cards can only be used in H/PCs or H/PC Pros with a Type II PC Card slot. They come in capacities from 4MB to 440MB. While they are the easiest way to add file storage to your PC Companion, the highest capacity cards are very expensive. Other, less expensive storage solutions exist, including the following devices:

- IBM microDrive (www.pc.ibm.com/us/accessories/workpad/index.html) - The microDrive is a miniaturized hard drive available in 170 and 340MB capacities. The microDrive is the size of a CompactFlash card and can be used to add storage memory to any PC Companions equipped with a CompactFlash slot that will read Type II Plus cards. The newer color-screen PC Companions and most (but not all) of the H/PC Pros have Type II Plus CF slots. The HP Jornada 680 does not, but it does have a Type II Plus PC Card slot. You can use a CF-to-PC Card adapter to use the MicroDrive with the 680 Jornada. You can also use the MicroDrive to swap data between a PC Companion and a notebook with a Type II Plus PC Card slot. I tested the IBM microDrive, and found it to be the most versatile, best small storage device I have ever used. The 170MB microDrive goes for about $400.00 and the 340Mb for about $500.
- Accurite Travel 120 SuperDisk Drive (www.accurite.com) -This ultra-portable floppy disk drive accepts the high-capacity 120 MB floppy disks. The drive itself cost $269, but additional 120MB floppies are as low as $6 each (purchased in 10-packs). This makes the Travel 120 a very inexpensive file storage solution. The Travel 120 draws its power for the PC Companion and I had no problems connecting it to my HP Jornada 680 H/PC Pro and accessing the floppy drive. The Travel 120 reads 1.44MB floppies as well, making it an excellent tool for sharing data between the PC Companion and a desktop/notebook PC. (Note: Not all Windows CE devices are strong enough to power the Travel 120. You'll be better off getting the optional AC power adapter along with the SuperDisk Drive.) Of all the larger external storage devices I have tried, this is my very favorite!
- Iomega Clik! Drive (www.iomega.com) – This slightly bulky add-on device is similar to Iomega's Zip drive, but much smaller. It stores data on 40MB "Clik! Disks" (about the size of a 50-cent piece). The unit I tested worked extremely well. The basic Clik! Drive costs about $200.00; additional Clik! Disks go for about $10.00 each. (Note: Iomega makes a really slick product called the "Clik! Card." It's a Clik! Drive the size of a Type II PC Card, allowing any desktop or notebook PC with a Type II PC Card slot to accept a Clik! Disk. Unfortunately, it doesn't support Windows CE yet. I hope Iomega remedies that soon.)
- Addonics Mini-Drives (www.addonics.com) – Addonics makes a portable ZIP drive; a portable external floppy disk drive that accepts 1.44 or 120 MB floppy disks; and is working on a portable CD ROM drive. All of these connect to the PC Companion via a PC Card interface, which means that they will not work with the Palm-size PCs. (I have not tested this unit.)
- ADPI PCMCIA 120 Floppy Disk System (www.adpi.com) – Analog & Digital Peripherals is marketing this portable floppy drive similar to the Accurite Travel 120 described above. They indicate that a Windows CE driver will be available soon.

Only the IBM microDrive and the CompactFlash cards work with the Palm-size PCs. All of the rest are external data storage devices that connect using a cable with a PC Card adapter on the end. They can only be used with devices that have the larger PC Card slots. In the case of PC Companions, that means the H/PCs and the H/PC Pros. These external storage devices are not as convenient as CF/PC cards, but they are less expensive per megabyte of data storage. They begin to make sense if you have a lot of data you have to take with you when you travel. ■

## Global Positioning System

GPS is a network of five ground stations and 24 satellites placed in orbit around the earth by the U.S. and declared operational in 1995. Transmitting on two separate L-band frequencies, GPS provides 24-hour instantaneous, precise and continuous three-dimensional navigation data to properly equipped military and civilian users in any weather conditions anywhere in the world.

Orbiting at 10,900 miles (20,200 km), the satellites complete a circuit of the Earth every 12-hours. Six satellites are above the horizon at any given time, at any location on the planet. A GPS device need only receive signals from four satellites to calculate time, location (latitude, longitude and altitude), direction and velocity. The signals are precise enough to calculate time accurate to more than a millionth of a second, velocity within a fraction of a mile per hour, and location to within feet. The GPS system is designed to provide greater accuracy to military users, but continues to expand into the civilian area. GPS is used for accurate navigation aboard private and commercial aircraft, ships and boats, trucks and automobiles. Commercial handheld GPS receivers have been available for a few years. GPS systems are used in search and rescue operations, detailed mapping, geodetic surveys, and more.

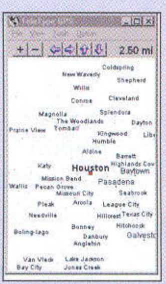
TeleType Company (www.TeleType.com).

TeleType is a small company out of Boston. They have sold GPS solutions for laptop PCs and stand-alone solutions for years, and were one of the first to develop mapping software for the Windows CE operating system. They've recently upgraded their Windows CE moving-map software to add support for door-to-door routing as well as updating all their U.S. street-level maps. They offer complete GPS solutions for Windows CE PC Companions, including a number of GPS receivers and connectivity cables. The TeleType GPS software displays full-color maps and geographic data on a color-screen H/PC, H/PC Pro or P/PC. Used with a GPS receiver it can literally guide you anywhere on the planet by interpreting GPS signals and plotting your position on a digital map.

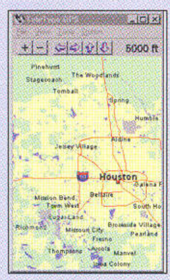
For this review, I elected to use the Garmin GPS III Plus, also available from the TeleType Web site. This is a standalone GPS receiver that attaches to the PC Companion via a serial cable. This battery operated GPS unit comes with a built-in 1.5" x 2.2"grayscale data/map screen. It has its own built-in street level map. (Additional maps can be downloaded from Garmin's MapSource CDs). More information about it and other Garmin GPS solutions can be found at www.garmin.com. The Aero 2100 attaches to the GPS III Plus via serial cables that come with the Aero and the GPS III Plus.

### Selecting the right PC Companion

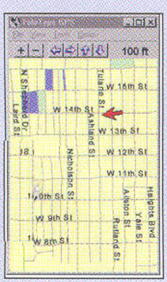
I had the right mapping software and a suitable GPS receiver, now all I needed was a suitable PC Companion. Although many now come with color displays, not all display well in the bright sunlight you experience when you're driving a car in the daytime. I tested many H/PC Pros and Palm-size PCs. The only two that I was satisfied with were the two Compaq Aero Palm-size PCs. The Aero uses a "reflective screen technology" which has now been upgraded to display 65,000 colors (see my review on page 16 of the July/August issue). Many think it's actually easier to view in bright light than it is in the dark. Once I'd decided to go with an Aero 2100 Palm-size PC, I had to accept its smaller screen size and lack of keyboard navigation. However, the TeleType GPS software was amazingly functional and I had no problems accessing data and moving around the screen.



Screen 1: At first, only city names were displayed, because I'd loaded the map images on a CompactFlash card and TeleType GPS software didn't know where they were.



Screen 2: After I directed the TeleType GPS software to the map directory on my CompactFlash card, a detailed, full-color map of the area surrounding Houston was displayed.



Screen 3: Once the GPS system is up and running, it displays a red arrow on the map, indicating your current location. A black tracking line (not shown here) traces your route on the map.

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### Setting up your GPS system

Setting up the system is a relatively straightforward process. First install the GPS software and desired maps on your PC Companion. Then connect the PC Companion to the GPS receiver via serial cables. Finally, turn on the GPS receiver and run the software on your PC Companion.

You install the TeleType GPS software program from your desktop PC to your PC Companion. Maps come on a CD ROM and must be installed from the desktop PC with a CD ROM player to the PC Companion. Maps take up storage space on the PC Companion (minimal storage 500Kb-1Mb), so only install the maps you need. However, if you travel a lot and wish to take along maps for all your desired destinations, you can quickly run out of map storage room. Fortunately, the Garmin GPS III Plus receiver connects via serial cable, leaving the Aero's CompactFlash slot free. You can install maps onto CompactFlash or PC Cards, leaving the internal memory free. The highest-capacity CompactFlash card I've seen is 96MB ($299, SanDisk, www.sandisk.com). Other portable file storage solutions are described in the sidebar on page 26.

TeleType admits that the process of installing maps is not entirely intuitive. However, they have excellent toll-free support (888-TeleType). If you have problems with the map download process, don't hesitate to call them.

### Voila! A full-color map

After setting up the software and connecting the GPS unit, I turned things on and got the display shown in Screen 1. As you can see, the only information displayed were city names, next to points, on a blank screen. The problem was that I'd loaded the map images on a CompactFlash card to conserve space. This was not the default location for map files and the TeleType GPS software didn't know where they were. I tapped on "Houston" and a dialog box appeared showing location information, with a button that said "Load Detailed Maps". I tapped the button and was asked for the location of a file named "tgr182011*.ttm". I directed it to the "Export Maps" directory that I had set up on my SanDisk 96 Mb CompactFlash card. Voila! A detailed, full-color map of the area surrounding Houston was displayed. The complete rendering took about 10 seconds (see Screen 2).

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### Road testing my GPS system

I decided to road test the complete system first on a drive from my office to my home. I connected the GPS III Plus to the Aero 2100 and turned things on. After about a minute, the GPS III Plus got a satellite fix and the TeleType GPS software immediately displayed a red arrow on the map display, indicating my current location (see Screen 3). I laid the GPS III Plus on my dashboard and the Aero 2100 in my drink holder (in its charging/serial cradle). The quality of the maps produced by this software are excellent. The ones I tested were slightly out of date, but TeleType assures me that by the time you read this review, they will have completely updated their maps.

> ***If you are looking for a relatively inexpensive, effective way to keep track of where you are and where you're going, I highly recommend the combination of the TeleType GPS / Aero 2100 / Garmin GPS III Plus.***

I was impressed with the test drive. The maps were vivid on the Aero's color display, and the position display very accurate. As I drove, a black line appeared on the map behind the red arrow, tracing the route I took. By the time I arrived home, the map displayed the complete route I took, along with data on how far I'd traveled, how long it took, and how fast I want. Even my average speed was recorded on the display of the GPS III Plus. If I so desired, I could set "waypoints" on both devices, and use this information for future travel.

Watching the red arrow move on the display was almost hypnotizing, and I had to be careful and look up frequently. Fortunately, most turn-by-turn navigation is done in city streets. You can always pull over and safely look at the map display. And if you have a passenger in the car, he or she can become the designated "co-pilot" to read the display and give you directions. Finally, TeleType offers an optional Palmtop Car Stand with a built-in power adapter. It lets you mount a Palm-size PC (or PalmPilot) on your dashboard for easier viewing.

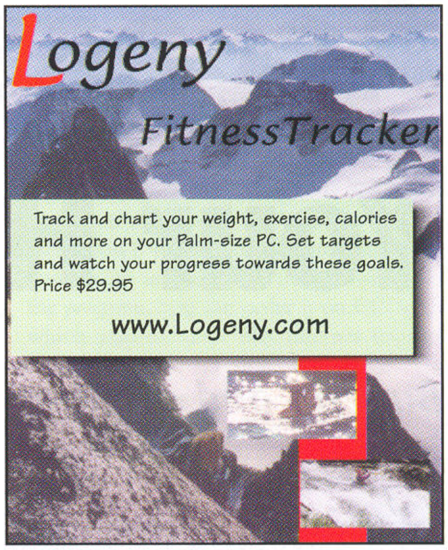
### An excellent, inexpensive color GPS solution

The TeleType GPS/Aero 2100/Garmin GPS III Plus is a great GPS system. I found the Aero 2100's display quite readable, in spite of its small size. But if you must have a larger screen, take a look at the new Aero 8000, Compaq's new H/PC Pro with a full 10" SVGA color display. It also has a non-reflective screen that performs well in bright daylight.

Be aware that even the newer updated maps you are viewing are not yet "live." Construction areas, street closures (temporary and permanent), detours, etc. will not show up on your map. Future advances in GPS technology will bring "live updates," but that will involve wireless communication. Note also that TeleType also offers a GPS receiver with a PC Card interface, which can be used with H/PCs and H/PC Pros (see sidebar page 26). In addition, other GPS receivers are available from Garmin and other manufacturers.

As the industry evolves, better and cheaper GPS systems will evolve. In fact, rumor has it that Casio is developing a CompactFlash GPS unit that works with its Palm-size PC. If the screen is readable in the sunshine, this will probably set the pace for the next generation of unified Handheld PC/GPS devices.

But for now, the TeleType GPS / Aero 2100 / Garmin GPS III Plus is a great GPS system. If you are looking for a relatively inexpensive, effective way to keep track of where you are and where you're going, I highly recommend this combination of hardware and software. ■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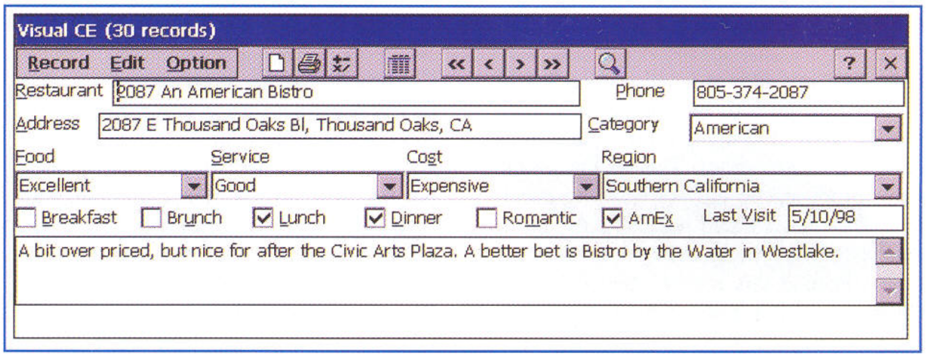
# Accessing Data On Your H/PC

## *Built-in and alternative database programs for your H/PC*

**BY DAVID SHIER**



Restaurant: 2087 An American Bistro
Phone: 805-374-2087
Address: 2087 E Thousand Oaks Bl, Thousand Oaks, CA
Category: American
Food: Excellent
Service: Good
Cost: Expensive
Region: Southern California
☐ Breakfast ☐ Brunch ☑ Lunch ☑ Dinner ☐ Romantic ☑ AmEx
Last Visit: 5/10/98
A bit over priced, but nice for after the Civic Arts Plaza. A better bet is Bistro by the Water in Westlake.

Screen 1: I used Visual CE to create on the H/PC this database of my favorite restaurants.

When *Handheld PC Magazine* asked me to write a review of the new Pocket Access application that comes with the Professional Edition Handheld PC, I thought it would be a good opportunity to design a simple database I've been wanting for my company. I planned to discuss how the pocket version of Microsoft's Access compares to the desktop version. However, as I started to use the program, I quickly discovered that Pocket Access had more limitations than I expected. It's not that Pocket Access doesn't add value to the H/PC, it's that understanding the value is a bit more complex than I expected. In discussing the article with our Managing Editor, we agreed that this subject deserved more coverage than a single article could provide. Therefore, this is the first of a three-part series on databases for Windows CE.

In this first part, we will provide an overview of both the original Windows CE database as well as Pocket Access. We will also introduce some of the alternatives available from various third-party vendors.

In the second part, we will take a closer look at the third-party database programs which allow the end user to design their own databases, as well as a few custom database programs designed for specific applications (such as recording credit card numbers.)

Finally, in the third part, we will discuss the options available to programmers for designing custom database applications. Companies such as Oracle and Sybase have created Windows CE versions of their more powerful database engines. There is even a version of the Basic programming language that can be run on the Handheld PC (or even a P/PC.) The NS Basic program supports both the standard Windows CE database and the more powerful Pocket Access database.

### The original Windows CE "database engine"

From the beginning, Windows CE had a "database engine" as an integral part of the operating system. The database engine is the core of the built-in programs that let you organize and access data; programs like Contact, Calendar and Tasks. This built-in database engine can also be used by applications developed by third-parties. Unfortunately, Microsoft did not structure things so the actual users of the H/PCs could create their own databases using this engine. I had been a long-time user of Hewlett-Packard's 200LX, a DOS-based handheld with a user-definable database program, before moving to Windows CE. The 200LX's database program was one of my most-used applications and I missed its features when I "moved up" to Windows CE.

A few companies have created programs that allow the user to design new Windows CE databases. In my opinion, the best of these is Visual CE (www.syware.com). Screen 1 shows a database of my favorite restaurants, created on the HP 200LX and ported over to my H/PC using Visual CE.

To use Visual CE, you design a new database on your desktop PC and then transfer it to the H/PC. While it would be nice to be able to design your database directly on the Handheld PC, this is not that bad a limitation. A more serious limitation of Visual CE is the lack of versatility: You can't sort on more than one column of data, nor can you create complex subsets of records. Sorting on multiple columns is important

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for almost any database. For example, in my restaurant database, I often want the sort on a number of factors: city, style of food, and price range. With Visual CE (and most of the add-on database programs for Windows CE) records can be sorted by only one field, and then are randomly listed within that field. I can sort to have all restaurants in a given city together, but no further.

Another limitation is that the basic design of the Windows CE database engine uses a "flat file" format. This means that all the data is stored in a single table. Modern databases owe their power to "relational" formats. In a relational database, data is stored in multiple tables, which are linked together. A simple example of a relational database would be an order entry database in which customer information is stored in one table, product information is stored in a second table, and the actual orders are stored in a third table. Each record in the "orders" table simply needs to point to a customer from the customer table and items from the item table. Keeping data in separate tables reduces the amount of data entered and can greatly speed up database searches. In our order entry example, a common requirement would be to get a total quantity of each item for all pending orders. In a flat file, each record must be searched to total up the quantities. In a relational database, the quantities are directly linked to the item table and are therefore quickly totaled. This becomes much more important as the size of the database increases.

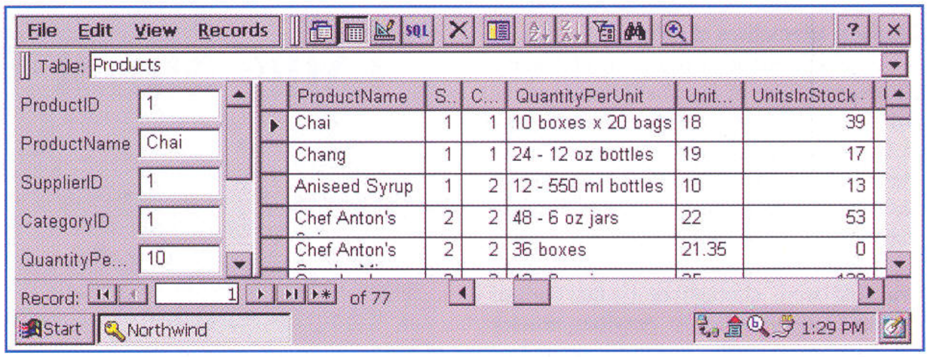

Table: Products

ProductID 1
ProductName Chai
SupplierID 1
CategoryID 1
QuantityPe... 10

| ProductName | S.. | C... | QuantityPerUnit | Unit... | UnitsInStock |
|---|---|---|---|---|---|
| Chai | 1 | 1 | 10 boxes x 20 bags | 18 | 39 |
| Chang | 1 | 1 | 24 - 12 oz bottles | 19 | 17 |
| Aniseed Syrup | 1 | 2 | 12 - 550 ml bottles | 10 | 13 |
| Chef Anton's | 2 | 2 | 48 - 6 oz jars | 22 | 53 |
| Chef Anton's | 2 | 2 | 36 boxes | 21.35 | 0 |

Record: 1 of 77

Screen 2: The Pocket Access split-screen view of this Product database displays the data entry form on the left and the data table on the right. Data can be viewed and modified in the form or table.

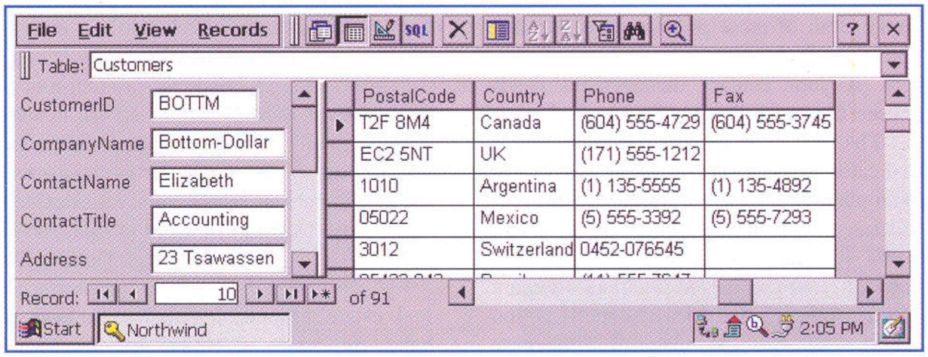

Table: Customers

CustomerID BOTTM
CompanyName Bottom-Dollar
ContactName Elizabeth
ContactTitle Accounting
Address 23 Tsawassen

| PostalCode | Country | Phone | Fax |
|---|---|---|---|
| T2F 8M4 | Canada | (604) 555-4729 | (604) 555-3745 |
| EC2 5NT | UK | (171) 555-1212 | |
| 1010 | Argentina | (1) 135-5555 | (1) 135-4892 |
| 05022 | Mexico | (5) 555-3392 | (5) 555-7293 |
| 3012 | Switzerland | 0452-076545 | |

Record: 10 of 91

Screen 3: Pocket Access can be used as a simple on-the-road reference to existing information within your database. Shown here, Pocket Access is used to find phone and fax information from the Customer data table.

## Pocket Access

Like Microsoft's desktop version, Pocket Access is a relational database. It stores your data in multiple tables and then has links that "relate" the data in them. However, unlike the desktop version, the forms displaying the data on the H/PC only contain data from a single table. This limitation makes Pocket Access fine for simple queries of data that has been entered in a desktop database and then downloaded to the H/PC. But is quite annoying if you are entering new records. An example will help clarify this.

In the example of the order entry database we described earlier, customer information is stored in the Customer Table. This table contains the customer's name, address and phone number. Each customer record is ssigned a unique ID number. Order records are stored in the Orders Table, which contains, among other things, the record number for the customer who placed the order. All the customer information is then linked in. In the desktop version of Access, you can have the Order entry form display a pull-down list of all the customer names from the customer table. Then, when the user selects a customer name, the record number is entered automatically. In fact, the user never actually sees the record number because all forms and reports can automatically look up the name and replace the number in the display or printout. This is not the case with Pocket Access. When you look at the order record, what you see is the customer ID number (or letter group) and not the name. Also, when entering new data, you must enter the customer record number and not the customer name. For this reason, Pocket Access is not well suited to the task of complex data entry.

So how does one use Pocket Access? I see two main functions for the program: First, it can be used to update existing information, and second, it can be used to reference information from the database.

## Pocket Access for updating information

In the order entry database example, one of the tables contained product information. That table would be stored on a desktop PC, but could easily be downloaded to Pocket Access on a small, portable H/PC. It would be very easy to walk around the stock room, take inventory of all the items, and update the Product data in Pocket Access (see Screen 2). You could then synchronize it with the Product data on the desktop PC, to make sure the larger database is updated and accurate. This use of Pocket Access avoids the typical, error-prone pen-and-paper method of inventory.

## Referencing information in a Pocket Access database

The second use that I see for Pocket Access is to simply reference existing information within your database. In this case, the user does not intend to make any updates, but simply wants a convenient form for reviewing data. For example, while I'm on the road I can use the order entry database to check for out-of-stock items or even look up a customer's phone number (See Screen 3). By not updating the information stored, I don't take the chance on corrupting the data. If you're an experienced database user, you can use SQL (Structured Query Language) to display the data you want (see sidebar, page 32).

### Database alternatives of note

As I indicated at the beginning of this article, the next issue of *Handheld PC Magazine* will continue this series with an in-depth look at various third-party database programs. In the meantime, it's worthwhile to note some of the specialize programs that provide database functionality for specific applications.

The first database products to become available were alternatives to the built-in Pocket Outlook suite. In previous articles we have extensively reviewed such programs as ACT for Windows CE (www.symantec.com) and my favorite: Pocket On Schedule (www.odysseyinc.com). Both of these programs synchronize with their desktop brothers and are worth a look if your contact management needs exceed the capabilities of Pocket Outlook.

The next class of database programs is dedicated to more specific applications. For example, eWallet (www.iliumsoft.com) provides a graphical representation of all the items you carry in your wallet. You can enter all your credit card numbers, frequent flier memberships and other details. If you are like me, you have many more of these cards than you would ever want to carry at the same time, so this program gives you a convenient way of having the more obscure information with you when you might need it. Another example is a program called Estate, which is a cooperative effort between my company, Shier Systems and Software (www.shier.com), and our German partners at Rundel Datentechnik (www.rundel-d.com). Estate is for on-site real estate property managers to have a handy reference to tenant and apartment complex data. Programs such as these are better suited to solving specific problems than general purpose applications such as Pocket Access.

Finally, there are database programs that provide alternative ways of viewing information. A fine example of this type of program is ListPro from Iliumsoft (www.iliumsoft.com). As its name implies, ListPro lets you create lists of items. You can have columns with flags and check off boxes to indicate the status of items in your list. I have started using ListPro for shopping lists, to store my various frequent flier accounts and other membership numbers. I will provide a more detailed review of ListPro in the next issue. ■

## Using SQL with Pocket Access

Pocket Access supports a subset of the standard database language known as SQL (Structured Query Language). This feature allows you to ask more complex questions of your database. For example, because of the limitations of Pocket Access, the customer ID number must be used in our order entry table and not the customer's name. Using an SQL Procedure, I can get a report of the orders which will include the name of the customer instead of the number. In this case, the SQL statement would be:

```
SELECT Orders.OrderID, Customers.CustomerID
FROM Orders INNER JOIN Customers
ON Orders.CustomerID = Customers.CustomerID
```

Of course, if you are not familiar with SQL, the above will appear as gibberish. But since Pocket Access allows you to store the SQL Procedures, it is possible to have a database programmer design the query statements for you. For those of you who are database programmers, an important limitation of SQL in Pocket Access is that any JOIN statement must be an INNER JOIN. If you don't plan on designing your own queries, then don't worry about what this limitation means as it only affects the programmers.

Using simple SQL queries, it is possible to use Pocket Access to look at information stored in various tables from your desktop database. However, it should be noted that you can't edit the data displayed from a query.

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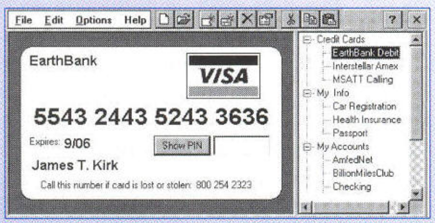

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# New PC Companion Products

Live Links to the Web sites mentioned in this section!
www.hpcmag.com
A Great Home Page For Users Of Windows CE!

The PC Companion Products listed here include hardware, software, publications, events, and developer services for Windows CE. Information about the H/PCs and Palm-size PCs themselves can be found in our "At A Glance" section on pages 42-43. Prices listed are suggested retail price. Many software products are available for online downloading. Listings do not represent an endorsement by the editors. We have tried to include a comprehensive collection of products and services available by mid-October 1999. However, there will be gaps due to information not arriving by our printing deadline. If you have a product to announce in our next issue, please send an e-mail message to editor@thaddeus.com. For live links to the Web sites mentioned in this section, visit our Web site at www.hpcmag.com.

## Hardware

### Accessories

#### FingerTip Stylus

Worn on the tip of an index finger, the Fingertip Stylus allows PDA users to write and tap on their screen without ever having to remove the built-in stylus. Compatible with any pen-based computing device.

*$19.99; Use With: H/PC, H/PC Pro, P/PC; Concept Kitchen; www.conceptkitchen.com; E-mail: info@conceptkitch; Phone: 415-252-3333*

#### Mobile Power Supply

A 12-volt power adapter available in versions for Sharp, Hewlett-Packard or Casio H/PCs. Plug into any 12 volt outlet and power the H/PC.

*$29-$39; Use With: H/PC; Aegis Technologies; www.primenet.com/aegiste; E-mail: aegistec@primene; Phone: 520-773-0189*

#### PDA Concepts Cases & Sholder Straps

A variety of carrying cases and sholder straps for PC Companions.

*$varies; Use With: H/PC; PDA Concepts; www.pda-concepts.com; E-mail: sales@pda-*concepts.com; Phone: 801-965-9141

#### Travelboard model 634

A Universal Keyboard for handheld computers. All Travelboard 634 units shipped since September 1st have been upgraded with the necessary hardware modifications to support both PC Companions and Palm Pilots. A downloadable version of the Windows CE software drive needed for the Travelboard 634 is available on the company Web site.

*$89.95; Use With: H/PC; Genovation; www.genovation.com; E-mail: sales@genovation.; Phone: 800-822-4333*

#### WriteRight Enhancements

Thin, clear, textured overlays that protect against scratches. WriteRights improve handwriting recognition through the use of an improved surface texture that simulates the natural feeling of writing on paper with a normal pen. The patented surface treatment eliminates glare.

*$27.95 (12-pack); Use With: P/PC; Concept Kitchen; www.conceptkitchen.com; E-mail: info@conceptkitch; Phone: 415-252-3333*

### Cases

#### SportSuit II

A black neopren case for the larger Palm-size PC family of products. It offers several internal pockets, a rugged zipper, heavy-duty screen protection, a pen holder, a reinforced plastic ring for attaching a handle, a belt loop, optinal velcro attachment for your Palm-size PC, and an external pocket. Several colors available. Inside case dimensions: 5.5" X 3.8" X 8"

*$27.95; Use With: P/PC; MarWare; www.marware.com; E-mail: sales@marware.c; Phone: 510-337-0231*

#### SportSuit III

A black neoprene belt clip case for the Palm-size PC family of products. It offers heavy-duty screen protection, a belt clip, and an external pocket.

*$19.95; Use With: P/PC; MarWare; www.marware.com; E-mail: sales@marware.c; Phone: 510-337-0231*

### Connectivity

#### JETCET CONNECT

A serial-to-parallel converter that establishes a reliable connection from your Windows CE based handheld PC to your printer's industry standard parallel port. Bundled with a copy of JETCET PRINT, JETCET CONNECT provides an out-of-the box working solution that will have you printing in 3 easy steps.

*$n.a; WESTTEK; www.westtek.com; E-mail: sales@westtek.com; Phone: 425-861-8271*

#### SlimSCSI 1460

Adapter that adds an SCSI port to H/PCs with Type II PC Card slots (not C/F slots). You can then connect your H/PC to any SCSI device, including CD-ROM drives, hard drives, scanners, and other popular devices with SCSI ports.

*$175; Use With: H/PC; Adaptec Inc; www.adaptec.com/; E-mail: salesbtc@btc.ada; Phone: 408- 945-8600*

#### TeleType GPS 12 Channel Mobile

Includes Garmin 12 channel GPS receiver, GPS serial cable, 4-AA batteries. Comes with TeleType GPS software and maps including street level maps for entire USA, and major roads of Canada. Supports Windows CE v2.0/Palm-size PC, Windows 95/98/NT. Windows CE users need PC serial/synch cable provided with the handheld computer. This package includes FREE Upgrades for one year (a $59 value). Mounted and Deluxe versions also available.

*$349; Use With: P/PC; TeleType; www.teletype.com/; Phone: 617-542-6220*

#### TeleType PC Card GPS Receiver

GPS receiver with PC Card interface. Requires any Windows

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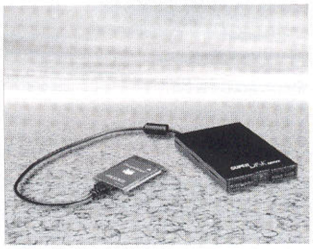

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mapping or tracking program capable of using NMEA output. Supports Windows CE devices as well as Windows 95/98/NT.

*$615; Use With: H/PC; TeleType; www.teletype.com/; Phone: 617-542-6220*

## Infrared Adapters

### Desktop IR Link

IrDA infrared adapter connects to your desktop PC's serial port and lets you easily transfer files and synchronize data between your PC Companion and desktop PC. A 2" square head connects to the desktop PC via a 6' cable. Works with PC Companions, Psions and Palm computers. Sharp Wizard and HP 200LX versions.

*$39.95; Use With: desktop PC; Aegis Technologies; www.primenet.com/aegiste; E-mail: aegistec@primene; Phone: 520-773-0189*

### ExtendNet 100S

An external multi-protocol print server that supports Fast Ethernet networks for one parallel port plus one serial or one infrared port for wireless printing from PC Companions and other infrared-equipped devices. (Customers wanting the IR port need to order the ESI-7000IR JetEye adapter.)

*$279; Use With: H/PC; Extended Systems; www.extendsys.com; E-mail: info@extendsys.com; Phone: 208-322-7575*

## PC/CF Card Readers

### PC Card Reader

Kingmax PC Card readers bring the convenience, functionality and portability to the desktop. It allows customers to easily and quickly download images from a digital camera, notebook, PAD and other multimedia devices to a desktop PC using removable CompactFlash memory card.

*$Varies; Use With: Desktop PC; Kingmax; www.kingmax.com; E-mail: kingmax@kingmax; Phone: 909-454-9888*

## PC/CF Cards, Other

### EXP Low-Power RS-232 Serial Port PC

Adds a low-power, high-speed serial port to systems with PC Card slot.

*$199; Use With: H/PC; EXP; www.expnet.com; Phone: 800-397-6922*

### In-Hand Scan Card

Turns your Palm-size PC or Handheld PC into a mobile bar code scanner. Combines Socket's battery friendly CompactFlash CF+ technology with a laser scanner from Symbol Technologies. Just plug the card into your Windows CE-based Palm-size PC or Handheld PC, launch Socket's ScanWizard keyboard emulation software, and read bar code data into any Windows program.

*$n.a.; Use With: H/PC, H/PC Pro, P/PC; Socket; www.socketcom.com; E-mail: info@socketcom.com; Phone: 800-552-3300*

### Socket Digital Phone Cards

Lets you interface with a digital CDMA or GSM phone to check and reply to e-mail, synchronize schedules and contacts, transfer files, and browse the web. Digital Phone Card slips into the Compact slot on a PC Companion and connects to the digital phone via cable. Versions available for CDMA or GSM phones. Cables available for QUALCOMM QCP 2700, 860 and 1960 series handsets. A list of supported mobile phones is available at www.socketcom.com/dpclist.htm.

*$n.a.; Use With: H/PC; Socket; www.socketcom.com; E-mail: info@socketcom.com; Phone: 800-552-3300*

## PC/CF Ethernet

### EthIR WAN

EthIR WAN is a high-speed infrared (IR) Internet access system for Internet appliances and portable computers including notebook, Handheld and Palm-size PCs. The EthIR WAN seamlessly integrates into any network providing instant internet connectivity. Provides each user with a dedicated 4 Mbps connection. The EthIR WAN family comprises the EthIR Switch, infrared switching hub and the EthIR Beam, an infrared network access point.

*$n.a.; Use With: H/PC, H/PC Pro, P/PC; Clarinet Systems; www.clarinetsys.com; E-mail: info@clarinetsys.com; Phone: 408-501-0250*

## PC/CF Memory

### LandWare Compact Flash cards

LandWare is now shipping Compact Flash Cards and CF-to-PC Card adapters. CF Cards in 8 MB, 16 MB and 32 MB capacities.

*$varies; Use With: H/PC Pro, P/PC; LandWare Inc; www.landware.com; E-mail: sales@landware.c; Phone: 800-526-3977*

## Service Publications

### Enterprise Solutions for Microsoft Windows

A quarterly magazine dedicated to providing the information resources for those interested in integrating Windows CE and CE devices into the enterprise. Will include, "strategic and information editorial, interviews with leading executives, frontline case studies, application overviews and ongoing columns that investigate hot areas every issue.

*$free (controlled circulation); Affinity Publishing; www.enterprisesolutionsmag.com; E-mail: affinity@pennwell.com; Phone: 206-281-0089*

### Windows CE Made Simple

Straightforward look at Windows CE for the beginner. Covers setting up your PC Companion, mastering the built-in Pocket applications, going online and sending/receiving e-mail, and the various Control Panel applications.

*£8.99; Made Simple Books; www.madesimple.co.uk*

## Software Communications

### InfoGation Calculator™

A hands-free, voice directed, four-function mathematical calculator that can be used with the Auto PC. It responds to numbers and operands such as plus and minus..

*Freeware; Use With: Auto PC; Download or demo available; InfoGation; www.infogation.com; E-mail: Info@infogation.com; Phone: 858-535-9870*

### InfoGation PhoneBase™

The PhoneBase software integrates a cell phone with the Auto PC to provide hands free operation while driving. The voice command interface supports a number of convenient features. The driver uses voice commands to select the desired pre set number for dialing, recall a number from the recently u list, or `speak' the phone number directly to the Auto PC.

*$n.a., Use with: AutoPC; InfoGation; www.infogation.com; E-mail: Info@infogation.com; Phone: 858-535-9870*

### Palm Talk for Handheld PC Pro

Full-function terminal emulation software for Windows CE 2.11 lets you connect to network servers and transfer files by Z-modem. Palm Talk supports LINUX, SUN as well as VT, ANSI, SCO and BBS, Z modem file transfer, one to one communication function, chatting window and color & font setting and so on. Palm Talk supports English and Korean.

*$n.a.; Use With: HPC Pro; ZIO Interactive; www.ziosoft.com; E-mail: palmgolf@ziosoft.com; Phone: +82 2 512*

### River Run MobileSuite

An integrated package, consisting of Mail on the Run!, All in Sync!, AppsBuilder and MobileCenter. MobileSuite provides built-in e-mail and groupware synchronization, automatic software upgrades, device management as well as the ability to develop a database access application that contains all these features, customized to meet your specific needs.

*$995 (includes 5 users) Use With: H/PC; River Run Software; www.riverrun.com; E-mail: info@riverrun.com; Phone: 203-861-0090*

## Database

### CEQuery

A relational database query tool that lets you read and modify relational database data on your Palm-size PC. Manipulate Access, SQLServer, Oracle or Sybase business or personal information on your Palm-size PC.

*$48; Use With: P/PC; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### METAmapper

A tool for creating customized databases, including: dictionaries, recipes collections, language phrases, chemical elements, common equivalents, special reference books and so on.

*$10; Download or demo available; META TOOLS; www.metatools.de*

### Productivity Efficiency Monitor (PEM)

A data collection system is designed to gather and furnish productivity and efficiency data on-site. The PEM software supplies operators with instant feedback on set-up and cycle time productivity-efficiency levels. It provides built-in coding provisions for delays, foreign elements, and pauses for lunch breaks or other non-paid time.

*$n.a.; C-FOUR; www.c-four.com; Phone: 800-558-2514*

## Developer

### CEdit

CEdit is a color syntax hilighting C++ editor for Windows CE. CEdit is designed for C++ developers who need to work with their source code when they are away from their desks. CEdit is compatible with Microsoft Visual C++. It allows you to open a Visual C++ project file on your handheld, so that you will have quick access to all of your C++ files.

*Price: $49.95; Use with: H/PCs; Download or demo available; Logical Sky Corporation; www.LogicalSky.com; E-mail: sales@LogicalSky.com; Phone: (orders only): 800-999-2734 or 805-288-1827; Fax: 815-371-2857*

### KazGrep for Windows CE

A search utility that helps you find a specified text/character pattern in any ANSI text file. Unzip and copy to H/PC, place .dll file in \root or \windows directory. KazGrep can find files recursively.

*Freeware; Use With: H/PC; Download or demo available; Tamada Kazuo; www.yamada-labs.com/soft.*

## Finance

### ExpenseDirector

Capture expense entries and auto log entries on the Palm-size PC and then synchronize the data to the ExpenseDirector Windows desktop application using Active Sync. Once on the desktop, data can be filtered in the Expense or Auto log grid view, and also, data can be exported to an Excel spreadsheet (using built-in Excel Wizard) or export the data to Quicken or Microsoft Money.

*$n.a.; Use With: P/PC; Iambic Software; www.iambic.com/timerepor; E-mail: info@iambic.com; Phone: 800-730-5370*

### KSE Abacus XT

Comes with extensive technical and scientific functions as well as computer science and financial functions. Capable of computations with binary-, octal-, decimal and hexadecimal numbers, logical operators (AND, OR, exclusive OR, NOT) and computations with complex figures. Can also compute percentage and currency conversion from Dollar to Euro and Euro to Dollar, also Euro to Deutsch Mark and from Deutsch Mark to Euro. The clearly arranged interface provides you with a fast and effective working environment.

*$34.90; KSE Software; www.kse.de; E-mail: sales@kse.de*

### Money

Helps you keep track of what is spent or received. Categorize your income and expenses to find out, for example, how much you spent on clothes last month or how much interest you have received in the last year. Categories can be creat-

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A service of PDAStreet.com

ed and edited easily. Money offers extensive reporting options.

*$n.a.; Use With: H/PC; Palmtop Software; www.palmtop software.com/; E-mail: info@palmtopsoftware.com; Phone: +44 (0)171 794*

### OmniSolve

A combination forms based financial problem solver with built-in finance/scientific calculator. Supports TVM, Investment analysis, date calculations, conversions, and more.

*$29.95; Use With: H/PC; LandWare Inc; www.landware.com; E-mail: sales@landware.c; Phone: 800-526-3977*

### Time and Expenses

Helps you track time, expense and travel information on your Palm-size PC. Time and Expenses allows you to pre-configure most things so that information can be entered quickly with just a few screen taps and minimal use of the input panel. Choose between Timesheet, Timer or single Timed Event entry. Textual reporting, by project and time, viewable on the Palm-size PC or imported into Excel on the desktop.

*$32; Use With: P/PC; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### TimeReporter for Timeslips 1.1a

A Timeslips handheld solution, that allows time slips and expense entries. Includes both Iambic Software's TimeReporter for Windows CE component, plus a direct link from the handheld device straight through to the Timeslips Deluxe database with NO intermediate steps.

*$119.95; Use With: H/PC; Download or demo available; Iambic Software; www.iambic.com/timerepor; E-mail: info@iambic.com; Phone: 800-730-5370*

## Games & Entertainment

### America's Greatest Card Games

A collection of 23 card games, including: Solitare Games: Canfield, Eagle, Free Cell, Golf, Pyramid, Spiderette, Wing. Casino Games: American Stud, Baccarat, Blackjack, Bonus Poker, Casino War, Deuces Wild, Draw Poker, Five Card Stud, Joker Poker, Pai Gow Poker, Red Dog, Vegas Rules Canfield, Vegas Rules Solitaire.

*$19.95; Use With: H/PC; Quantum Axcess; www.wizworks.com/wince*

### BigFoot

An obstacle racing game for the Handheld PC. Control the pick-up truck through the twelve levels avoiding the holes in the road, mines, helicopter and other obstacles in your path. Color screen, CE 2.0 H/PCs only.

*$32; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### Block

Block is the sliding block puzzle of old — re-arrange the sliding tiles to their initial form. As well as the numbers 1-15, this version contains five other pictures, which vary in difficulty.

*Freeware; Use With: P/PC; Download or demo available; Sticky Software; www.sticky.net; E-mail: software@sticky.com*

### BugRoger

A 3-D space shooting game for Windows CE. Fly your space ship against tough ememies and obstacles. The aim of the game is to find and kill the leader of the enemies before the time runs out. If you succeed, you automatically progress to one of the of the next ten levels. Color screen, CE 2.0 H/PCs only.

*$24; Use With: H/PC; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### Casino Pack

Experience the excitement of the casino right on your Handheld PC! Enjoy Video Poker, Slots, Blackjack, Video Keno and Roulette any time and anywhere you please.

*$19.95; Use With: H/PC; Quantum Axcess; www.wizworks.com*

### Cruel 1.5 for Windows CE

Play this solitaire game for a break after a hard day. The goal of Cruel is to move all the cards from the lower stacks up to the suit stacks.

*Shareware: $10.95; Use with: H/PC; Demo or download available; KSE Software; www.kse.de/; E-mail: sales@kse.de*

### CyberSnake

You are a CyberSnake living among the junk in space. The aim of the game is to eat 'PowerMetal' or 'Coins' to pass to one of the the next 25 challenging levels. You lose a life if you collide with the walls, yourself or any obstacle. The length of the CyberSnake and your score increases as you eat more coins. Developer certifies it for HP 420 and Casio E-100/105 only.

*$32; Use With: P/PC; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### Daughter in the box

A Japanese puzzle game.

*Freeware; Use With: H/PC; Download or demo available; BiGlobe; www2r.biglobe.ne.jp/~tasc*

### Fun Pack for Windows CE

Enjoy the fast paced arcade action of Cosmic Defender, Bust-A-Block, Cell Warz, Laser Bikes and more.

*$19.95; Use with: H/PC, P/PC; DQuantum Axcess; www.wizworks.com/wince.htm*

### Iron Rain

Your mission is to destroy the evil leader of the space Kingdom. Use the arrow keys to control your space ship and tap the stylus to select the destination position for your ship.

*$24; Use With: P/PC; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### Jimmy Crossword

Supports the two most popular crossword file formats, "USA Today" and "New York Times" allowing you to find many existing puzzles on the Internet. On the Handheld PC, it shows both the grid board and the clue pane. On the Palm-size PC it uses a tab bar to let the user see each pane as desired.

*$24; Use With: H/PC; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### PalmPlayer

MP3 player for P/PCs. Supports playlist and skin support.

*Shareware: $9.95; Use With: P/PC; Download or demo available, Conduits; www.conduits.com/ce; E-mail: flash@conduits.com*

### Pocket Piano

Tap out your favorite tunes on an H/PC. Music quality depends on speaker quality and your tapping ability. This is a very basic system. The only menu option which does anything is Music/Keyboard. Sticky Software will not be offering support for this program at this stage. CE 1.0 users will need MFCW-CE.DLL, downloadable from developer's Web site.

*Freeware; Use With: H/PC; Download or demo available; Sticky Software; www.sticky.net; E-mail: software@sticky.com*

### Solitaire Pack

Enjoy 12 varieties of solitaire on your Handheld PC, including: Double Klondike, Free Cell, Golf, Yukon, and more.

*$19.95; Use With: H/PC; Quantum Axcess; www.wizworks.com*

### SolitairePack

A collection of 16 solitaire card games for Windows CE, including: EastHaven; Forty Thieves; Indian; Square; Canfield; Auld Lang Syne; Blondes and Brunettes; Aces Up; Baker's Dozen; Black Hole; Eagle Wing Fortune's Favor; FreeCell; Klondike; Rouge et Noir; Alternate.

*$32; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com; Phone: + 44 (0)1483*

### Solitary 1.5 for Windows CE

Solitary - the ultimate brain twister. Try to jump over the checkers, so that only one checker is left right in the middle of the game field. You think it's easy. Think again.

*Shareware: $9.95; Use With: H/PC; Download or demo available; KSE Software; www.kse.de/; E-mail: sales@kse.de*

### Unicom

A multi-platform game emulator for color screen H/PCs. Includes GameGear and Sega Master System (SMS) emulators ported to Windows CE. Unicorn does not contain any games,

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as they are copyrighted by the companies which produced them. You have to find the cartridge images yourself. You should buy the original cartridges for each image you are using, or use a copier on the cartridges you own. It is illegal to play games you do not own. Unicorn is compatible with hundreds of games. A full compatibility list can be found at www.jimmy.com/Unicorn.

*$32; Surerange Analysis; www.surerange.com; E-mail: info@surerange.com*

### Word Search CE

Provides you with 50 thematic word search puzzles to solve that are 10 x 10 in size. The object is to find the words in the word list in the grid.

*$15; Use With: H/PC; Download or demo available; Tracker Software; www.puzzlexpress.com/Ind; E-mail: MsKrypton@MSN.com*

### Yachtzee 1.5 for Windows CE

Windows CE version of the traditional game of five dice (known as "Kniffel" in Germany). Includes an integrated computer player and up to three more player's.

*Shareware: $22.90; Use With: H/PC; Download or demo availableKSE Software; www.kse.de; E-mail: sales@kse.de*

## Graphics/Imaging

### Bmp2bp

A bitmap file converter for .bmp and .2bp files (Japanese version only).

*Freeware; Use With: H/PC; Download or demo available; BiGlobe; www2r.biglobe.ne.jp/~tasc*

### Cam2Jpg

Converter graphics images from CAM to JPEG format. CAM is a graphic file format used by CASIO's digital camera QV series.

*Freeware; Use With: H/PC; Download or demo available BiGlobe; www2r.biglobe.ne.jp/~tasc*

### Tascal Graphic Viewer

A multi-format graphic viewer. (Currently support BMP, JPEG, PNG, TIFF (not including LZW).

*Shareware: $12; Use With: H/PC; Download or demo available; BiGlobe; www2r.biglobe.ne.jp/~tasc*

## Handwriting Recognition

### ARTrecognition Professional Edition

Combines ART's handwriting and voice recognition software products, smARTwriter and ARTcommander. Write naturally on the screen in your own handwriting. Create custom symbols or gestures to open applications or insert boilerplate text. Use voice commands to open applications, call up files, look up contact information, check E-mail or send voice mail.

*$79.95; ART Advanced; www.artcomp.com; E-mail: sales@artcomp.com; Phone: 888-SMART45*

### ArtSPen

A handwriting recognition tool with a single-character input style. ArtSPen has free style handwriting with self-learning and full customization capability, full non-English characters input support, and text macro support for speed writing in shorthand.

*Shareware: $15; Use With: H/PC; Download or demo available; ArtSoft; www.artsoft.ru/eng/artsghp; E-mail: info@artsoft.ru*

## Infomanagers

### Serial Numbers

A simple information manager for organizing the serial numbers of software, devices and other things.

*$9; Use With: H/PC; Download or demo available; Softwareburo Muller; www.sbm.nu; E-mail: info@sbm.nu*

### The Safe

An application for maintaining the serial numbers, online passwords, credit card PINs and other things. All the data can be protected by real encryption - not only password protecting the program by itself.

*$19; Use With: H/PC; Download or demo available; Softwareburo Muller; www.sbm.nu/; E-mail: info@sbm.nu*

## Patches/Service Packs

### Mobilon Pro and TriPad 3.0 Service Pack 1

This service pack will enhance the following applications for Mobilon Pro and Mobilon TriPad: PocketAccess, Pocket PowerPoint, PocketWord, Pocket IE and Inbox.

*Freeware; Use with H/PC Pro; Download or demo available; Sharp Electronics; www.sharp-usa.com ( search "service pack").*

## Reference

### Collins Dictionaries

Offers the complete paperback version of Collins English to French, German, Italian, and Spanish Dictionaries with over 100,000 translations and 70,000 references and a wide coverage in areas relevant to business and office automation.

*n.a.; Use With: H/PC; Palmtop Software; www.palmtopsoftware.com; E-mail: info@palmtopsoftware.com*

## Synchronization

### ActiveSync 3.0

Update of Windows CE Services synchronization software for PC Companions. Fixes many problems, including difficulties synchronizing with Windows NT computers.

*Freeware; Use with: Desktop PCs; Microsoft; www.microsoft.com/windowsce/Products/download*

### CorporateSync 1.1 for Windows CE

Synchronize your CorporateTime, OpenTime or Netscape Calendar with Windows CE.

*$n.a.; Corporate Software; www.cst.ca; E-mail: paolac@cst.ca; Phone: 514 733-8500*

## Utilities

### ArtSKey

A language localization utility for Windows CE (v2.0) based Palm-size/PCs. ArtSKey makes it easy to work with P/PC users whose main language is not English (Western European, Central (Eastern) European language families), using their national layout of float keyboard (like in desktop Windows).

*Shareware: $25; Use With: P/PC; Download or demo available; ArtSoft; www.artsoft.ru/eng/artsghp; E-mail: info@artsoft.ru*

### ArtSTask

Task Manager tool intended to switch to or close active application on your P/PC. Fully integrated into Windows CE as a desktop channel. Image or text only button supported for fast screen refreshing.

*Shareware: $10; Use With: P/PC; Download or demo available; ArtSoft; www.artsoft.ru/eng/artsghp; E-mail: info@artsoft.ru*

### CEDOS

CEDOS is special version of DOS adapted for Windows CE OS.

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To use it, you must first install XT-CE, special 80186 PC Emulator for the Windows CE. A demo version of XT-CE comes with the CEDOS demo. Once installed, you can use standard DOS commands and run DOS programs on your Windows CE device.

*$14.95; Use With: H/PC; Download or demo available; Paragon Software; www.penreader.com/index.; E-mail: msupport@penrea*

## dTree 2.1

File manager that displays Windows CE directory in a tree view. Lets you select a file and beam it to another device via the IrDA port. An offline html viewer is also integrated.

*Freeware; Use With: P/PC; Download or demo available; Derago; www.derago.com/; E-mail: support@derago.com*

## Flipper Pro

Flipper adds an unobtrusive taskbar icon to your P/PC. Single-tap on the icon and your current program (or desktop) flips to the background, and a previous program flips to the foreground. Keep single-tapping and all the open applications will appear, one after the other.

*$19.95; Use With: P/PC; Download or demo available; Sticky Software; www.sticky.net; E-mail: software@sticky.com*

## Microsoft Plus! Pack

A utility suite for the H/PC Pro that includes the following:

* Program Switcher - quickly switch programs.

- Resource Meter - displays the amount of program memory, storage memory, and main battery power (if your Handheld PC supports this feature) in the status area of the taskbar.
- Mute - activate or turn off all sounds, by simply selecting the Speaker icon in the taskbar.
- Pocket Paint - create pictures and edit images with Pocket Paint, a pocket-size version of Microsoft Paint.
- Squares - a game of strategy.
- Pocket Word Count - counts the number of words in an open Pocket Word document.
- Image Viewer - view all gif, .jpg, .xbm and png files. Will view most .bmp files, and .tif files generated by the MS-FAX service.
- Outline Converter - converts Pocket Word outlines into Pocket PowerPoint presentations.
- PIM Today - shows all of today's PIM data in one window.
- Spell Checker - checks the spelling in outgoing messages in Inbox.
- Pocket PowerPoint Templates - use these templates in Microsoft PowerPoint 97 to create presentations that can be viewed on your Handheld PC with Microsoft Pocket PowerPoint.
- Plus! Background Image - a background image for your Handheld PC's desktop.
- Favorites - automatically synchronize Internet Explorer Favorites between the desktop computer and H/PC Pro.

*Freeware; Use With: H/PC Pro; Download or demo available; Microsoft Software; www.microsoft.com/windowsce/Products/download/*

## Power View

Keep track of how your H/PC or P/PC's batteries are doing, with this free utility. An icon on the tooltray keeps you informed as to the percentage power remaining, and a graph display makes it clear which applications are sucking your energy.

*Freeware; Use With: P/PC; Download or demo available; Sticky Software; www.sticky.net; E-mail: software@sticky.com*

## Speaking Clock

Set your H/PC or P/PC to tell you the time. Using sampled waveforms your Palm-size PC or Handheld PC can read out the time to the nearest few minutes - all with a female voice, complete with Northern Irish accent. You can record another voice if you choose. Special "fuzzy logic" means you won't hear "The time is one three zero seven", but instead you'll be told that the time is "just after five past one." Assign this program to one of your user-definable keys, and you can be told the time without even having to hunt for your stylus.

*Freeware; Use With: P/PC; Download or demo available; Sticky Software; www.sticky.net; E-mail: software@sticky.com*

## Sticky Buttons Suite

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*$19.95; Sticky Software; www.sticky.net; E-mail: software@sticky.com*

## Tascal Lha

A file compression/decompression utility for the LZH format, that runs on Windows CE. As the LZH format is common in Japan, this software is handy for un-archiving compressed files from Japanese sources.

*Freeware; Use With: H/PC; Download or demo available; BiGlobe; www2r.biglobe.ne.jp/~tasc*

## TascalGauge

Converter for scales and measures and weights.

*Freeware; Use With: H/PC; Download or demo available; BiGlobe; www.biglobe.ne.jp/~tasc*

## TascalTaskMan P/PC

Adds a tasks manager to the system tray. Tap the icon and switch or close applications.

*Freeware; Use With: P/PC; Download or demo available; BiGlobe; www.biglobe.ne.jp/~tasc*

## VBCE Utility Control

Provides miscellaneous methods for VBCE/NSBasic developers for accessing the CE registry, Shell to other applications, power stats, memory stats, and more...

*Shareware: $32.00; Download or demo available; VCCE.COM; www.vcce.com/sourcecode*

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Andrew M.
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# What's in a Name?

Today we have Handheld PCs, H/PC Professionals, Palm-size PCs, Smart Phones, Feature Phones, sub-notebooks, Information Appliances, and all manner of names for them! These devices are all designed to provide us with information that we need when we are on the go. Does it really matter what they are called? Does it matter whether they are a computer first and a wireless device second, or a wireless device first and a computer second?

When it comes to names, I prefer "Information Appliance." This name describes what these devices should be — business tools that are focused around what the individual wants and needs. An Information Appliance is a PDA, a Handheld PC, a Palm-size PC, or even a wireless phone with some elementary computing capabilities.

Microsoft has aspirations of making Windows CE the operating system of choice in a wide variety of mobile devices including all of the above plus automobile radios, set-top TV boxes, and perhaps even pagers. However, there are many other operating systems that compete with Microsoft's OS that are being used in many different types of Information Appliances.

In reality, users don't really care which operating system is used (sorry, Microsoft). And they don't care that much about the form factor either. The compelling reason we carry these devices is that they provide us with access to information that we want and need when we are not sitting in front of a desktop PC. We need it because it enables us to take better care of our clients, to make sure we show up on time for meetings, and to ensure that we remember to send that promised piece of information to a prospective client. Information Appliances are here to help us do more in less time, do it better, and to help us keep track of what we have done.

## Conscious-carry vs. Unconscious-carry

I divide Information Appliances into two distinct classes: "Conscious-carry" and "Unconscious-carry." Conscious-carry devices are those that do not fit into a pocket, a purse, or on a belt. As we leave home or office, we have to consciously decide whether or not we need to take it with us. Handheld PCs and newer H/PC Pros are definitely conscious-carry devices, as are all laptop PCs and even some of the new Smart Phones.

An unconscious-carry device is small enough to slip in our pocket without worrying about it. Even if we don't use it to its full potential this time, we might want to access some of the information it contains. Small mobile phones, pagers, and the smaller Palm-size PCs fit into this class. Some people might want to carry a combination of conscious and unconscious-carry devices, but I would much rather carry two unconscious-carry devices than a single conscious-carry device.

## Work-creation and information-access

We also need to consider the difference between work creation and information access. In the PC Companion world, the Handheld PCs and H/PC Pros are designed to let you continue doing the work you would normally do on your desktop PC, while you are on the road. The Palm-size PC is designed to let you access important data. But there is certainly cross-over between these two roles. Does a work-creation device have to have a full-size keyboard? Does an information-access device have to be small in size and capability? Which type of device do we want to carry? Which type do we have to carry?

Do the names of devices really matter or is it better to categorize these devices as conscious-carry or unconscious-carry; as work-creation or information-access devices? What we really need is remote access to information, day or night, no matter where we are. The size and name of the device that connects us to this information is not nearly as important as access to the information. ■

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Terence
Goggin

# Personalizing Your PC Companion

On September 28th, a small startup software company in Seattle released a new Windows CE application that may change the way you use your PC Companion. Interestingly enough, it will do this whether or not you purchase a copy.

Lately, there's been a very strong push to get Windows CE devices to be a part of our personal lives as well as our business lives.

For instance, even from the beginning, Microsoft's Windows CE Entertainment Pack was an entertaining, inexpensive way for us to do something with our CE devices when we weren't using them for their "serious" business purpose. Even now, Microsoft is offering a free "minesweeper" sample game to entice you to buy the whole set. (Incidentally, the *Handheld PC Magazine Buyer's Guide 2000* now lists 115 game software titles, up from 14 in 1998.)

And we're starting to see some popular action games make the transition to CE. For example, several people are now working on Windows CE versions of the popular PC game "Doom." I've seen a few of the Palm-size PC "Dooms" and impressive does not begin to describe them.

At the Windows CE Developers' Conference last June, one of the most highly attended and talked about sessions was on game development for Windows CE. Microsoft even released a free game development "sprite engine," and some sample code for an "asteroids" game so that anxious developers could get started with creating their own games.

But perhaps more than any of these examples, Siscosoft's new Golfwits application demonstrates the real potential of turning the PC Companion into a very personal digital assistant.

### The ultimate golf software package

Golfwits™ (www.golfwits.com/main.html) turns a Palm-size PC into a "smart-scorekeeper" for professional or amateur golfers. You can use Golfwits to create topographical maps of your favorite courses. Then, as you play your next game, you can pull your Palm-size PC out and enter information about how your game is going. (Golfwits was developed with the Compaq Aero 2100, and its outdoor-optimized display in mind.) Golfwits records your score for each hole, your technique, the type of club you used and so on. You can even make audio "notes" to yourself about each hole, so that you remember the challenges the next time you're on the course. Golfwits tracks the kind of information you need to analyze your last game and plan for the next one.

The next version of Golfwits will be even smarter, more like a good caddie than a scorekeeper. As you're playing and entering information, Golfwits will "learn" about your technique and how you're doing on certain holes. It will use this information to begin recommending clubs for you. While a percentage of PC Companion users are also golfers, the real importance of Golfwits in not golf, but the trend it represents. That is, the development of "smart" programs that not only track and organize information that is personally important to you, but also analyze and give advice about that information.

Microsoft's Harel Kodesh said that, "CE was built with one thing in mind, and that is powering information appliances." It seems clear that digital music, arcade-style games, and a personal golf coach are just the beginning of this hyper-personalization trend. Stick around – there's lots more planned. ■

*Terence "Dr. CE" Goggin, author of* The Windows CE Developer's Handbook *and a recognized Windows CE expert, has written numerous books and articles on Windows programming and the Internet. He is a Los Angeles-based consultant specializing in Windows CE solutions. He can be reached at terenceg@doctorce.com "Dr. CE" is a trademark of Terence Goggin.*

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# The Sound of (Digital) Music

If you like to take your music with you, wherever you go, and you have a PC Companion, you're in luck. The new MP3 standard of digital audio has come to the world of Windows CE. Casio started the trend with their Cassiopeia E-100 Palm-size PC, which came with a stereo headphone jack and an optional MP3 player. And HP's recently-released Jornada 430se Palm-size PC follows suit. Interestingly, the MP3 player that comes with the new Jornada is available for all PC Companions.

MP3 has been in the news a lot in recent months. It seems the music industry worried that people would bootleg copies of music they owned and pass them around for free. They sued, trying to get MP3 wiped off the face of the earth. But they lost and it looks like MP3 is here to stay.

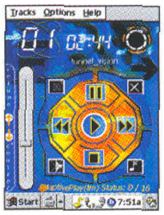
MP3 is a way of storing and sharing music electronically, taking up less file storage space than it does on the original CD. They do this by filtering out super high and low frequencies "that you don't hear anyway." Needless to say, this annoys some audiophile purists, but the sound is pretty darn good.

## Hum MP3 player

The MP3 player found on the new Jornada and available to any Windows CE user is the Hum Player from Utopiasoft. You can download a free demo of Hum at the Utopiasoft Web site: www.utopiasoft.com.

Utopiasoft's Web site lists the PC Companions they've tested and certify to work with Hum. However, because some only have mono headphone jacks, or nothing more than the built-in speaker, the quality varies tremendously. Utopiasoft ranks them for performance, from 5-star (best, in stereo), [illegible] 2-star (least adequate performance):

**5-Star** (in stereo): Casio Cassiopeia E-100/105/500 series (the Jornada 430se hadn't been tested but will probably go here)



Utopiasoft's Hum MP3 player shown on the color-screen HP Jornada 430se.

**4-Star:** Casio Cassiopeia E-10/11/55 series, Vadem Clio, Compaq Aero 2100 series, Compaq 2010 series, Everex Freestyle series, IBM WorkPad z55, NEC MobilePro 770, Philips Nino 300 series, Sharp Tripad PV6000

**3-Star:** HP 620LX, HP Jornada 820, Sharp HC-4500/4600

**2-Star:** HP Jornada 420, Philips Velo 500

## Downloading the music

Once you've set up Hum on your PC Companion, it's time to download some music. While MP3 files are much smaller than the WAV files on CDs (about 10%-25% of the size of WAV files), they are still relatively large. I happen to know for a fact that the greatest rock band ever to grace a stage was the Grateful Dead. They actually encouraged people to record their concerts and I have found sites that have whole concerts converted to MP3 format. The whole concert is around 100 Mb (a little too big for a Palm-size PC). However, a single 7½ minute song was only 6,079kb. I used one of the popular Web search engines to look for MP3 and got 151,111 hits. Many of the current recording stars release portions of their music as MP3, to encourage you to buy the whole CD.

Here are Web listings for some of the more popular MP3 sites (most also have players that you can download for your desktop PC):

MP3.com – www.mp3.com
MP3yes.com – www.mp3yes.com
Audiograb.com – www.audiograb.com
Rioport – www.rioport.com

If you can't find what you want on these sites, there are many more out there, so go to your favorite search engine and type in MP3 and have at it. If any of you are interested in Grateful Dead MP3 files, or have any that you want to share, let me know at tom_gibson@thaddeus.com

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# PC Companions

**What is a PC Companion?** PC Companions are small, portable computers using the Windows CE operating system. All come with operating system and basic applications built in.

**Reading This Chart: Price** $ U.S. unless otherwise indicated; **Display** e.g. 10" = diagonal measurement in inches; 800x600 = pixel resolution; 256c = displays 256 colors; Touchpad = pointing device if unit does not have a touchscreen; **CPU** e.g. 128 MHz = processor speed, SH4 = processor type. NOTE: you may need to know the processor type when you purchase 3rd party software for the device.; **RAM/ROM** RAM = memory available for running programs and storing data. ROM = used for permanent storage of built-in OS and applications. For example, 16(64) RAM means the PC Companion ships with 16 MB RAM which can be expanded to 64 MB RAM with an upgrade option; **Modem** a number in this column indicates a built-in modem and the max. speed it operates at ; **Ports** I/O ports: A=Audio I/O jacks Cf=CompactFlash Slot Fd=Floppy drive M=MiniDRAM slots P2=PS2 Slot P=Parallel port U=USB V=VGA-out **Battery** indicates the type of battery used and the hours of continuous use you will get, according to mfg. specs.; **Size/Weight** dimensions of device, in inches (depth or length x width x height) and pounds, unless otherwise indicated; **Comments** additional features of note.

## Handheld PC Pros

*Windows CE 2.11+ operating system and Handheld PC Pro Edition of built-in applications. All units have backlighting; All but 3 units have touchscreens; All units have built-in microphones and speakers; All have PC Card slots, Serial, modem, and IrDA ports.*

| PC COMPANION | PRICE | DISPLAY(C=COLOR) | CPU | RAM/ROM | MODEM | PORTS | BATTERY | SIZE(IN)/WT(LB) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| **Compaq Aero 8000**<br>www.compaq.com<br> | $949 | 10", 800x600, 256c<br>touchPad | 128MHz<br>64-bitSH4 | 16 (64)RAM<br>16 ROM | 56k | Cf,V,A,P2 | L-Ion/ 7hr | 10.75x8.5x1/2.95* | SmartCard reader; optional 13hr battery |
| **Fujitsu PenCentra130**<br>www.fpsi.fujitsu.com | n.a. | 8", 640x480 256c | 131MHz<br>MIPS | 16 (48)RAM<br>24 ROM | 56k | (2)U,P2 | L-ion/ 12hr | 8.9x 6.5x 1.3 / 32oz | Pen-entry tablet; 8MB flash ROM built-in; software |
| **HP Jornada 820**<br>www.hp.com/jornada<br> | 999 | 8.2", 640x480, 256c<br>touchPad | 190MHz<br>ARM | 16 (32)RAM<br>16 ROM | 56k | Cf,V,U | L-Ion/ 8hr | 10x7x1/2.5* | Optional 15hr battery |
| <br>**HP Jornada 680 & 680E**<br>www.hp.com/jornada | 899 | 6.5", 640x240, 256c | 133MHz<br>SH3 | 16 (32)RAM<br>16 ROM | 56k | Cf,S | L-Ion/ 7hr | 7.4x3.7x1.3/1.1* | Pocketable H/PC Pro; optional 21hr battery |
| **Hitachi HPW-600 ET**<br>www.hitachi.co.jp/Prod/hpw/<br> | 899 | 7.5", 640x480, 65Kc | 128MHz<br>SH4 | 16 (32)RAM<br>16 ROM | 56k | Cf,V,U,A | L-Ion/ na | 8.7x1.2x6.3/1.6* | Tablet H/PC Pro with no keyboard |
| <br>**IBM WorkPad z50**<br>www.pc.ibm.com | 999 | 8.2", 640x480, 64Kc<br>TrackPoint | 131MHz<br>MIPS | 16 (48)RAM<br>20 ROM | 33.6k | Cf,V,A | L-Ion/ 8hr | 8x10.2x1/2.7* | Optional 16hr battery |
| **Itronix T-5200**<br>www.itronix.com<br> | varies | 7.3", 640x240, mono | 74MHz<br>MIPS | 16 RAM<br>16 ROM | 33.6k | A | L-Ion/ na | na/na | Ruggedized H/PC Pro for vertical market applicati |
| <br>**NEC MobilePro 800**<br>www.neccsd.com/ | 990 | 9.4", 800x600, 64Kc | 131MHz,<br>MIPS | 32 RAM<br>24 ROM | 56k | Cf,A,V,U | L-Ion/8hr | 9.6x7.5x1/2.5* | Mono headset jack |
| **NEC MobilePro 770**<br>www.neccsd.com<br> | 790 | 8.1", 640x240, 65Kc | 131MHz<br>MIPS | 32 (48)RAM<br>24 ROM | 56k | Cf,A,V | L-Ion/10hr | 9.6x5.2x1.1/1.7* | Mono headset jack; Jap. version available. Only 1/2 VGA screen H/PC Pro with fully touchtypeable keyboard |
| <br>**NTS Dreamwriter IT**<br>nts.dreamwriter.com | 895 | 640x480, 256c | 80MHz<br>SH3 | 16 (64)RAM<br>16 ROM | 33.6k | P,A,Fd | NiMH/ 8hr | 15x11x2.5/5.5* | Built-in LAN adapter & Floppy drive |
| **Samsung IZZI Pro**<br>www.samsung.com<br> | est 850 | 8.2", 640x480, 256c<br>TouchPad | 148MHz<br>MIPS | 16 (48)RAM<br>16 ROM | 56k | Cf,V,U | L-Ion/ 10+hr | 8.94x7.76x1.1/2.2* | Not available in U.S. |
| <br>**Sharp Mobilon TriPad**<br>www.sharp-usa.com | 999 | 9.4", 640x480, 256c | 90MHz<br>MIPS | 16 (32)RAM<br>24 ROM | 33.6k | Cf | L-Ion/ 12hr | 11.25x8.75x1/3.2* | Sleek; unique 3-position hinge for notebook, display, tablet functioning |
| **Sharp Mobilon Pro**<br>www.sharp-usa.com<br> | 899 | 8.2", 640x480, 4Kc | 129HMz<br>MIPS | 16 RAM<br>16 ROM | 33.6k |  | L-Ion/ 8hr | 9.3x7.7x1.1/2.7* | Accepts optional digital camera card |
| <br>**Symbol PDT 7500**<br>www.symbol.com | na | 240x160, mono | 66MHz<br>AM486 | na RAM<br>na ROM | na | Ir,Scan* | L-ion/ 10hr | 3.5x 2.2x 8.4 / 1.3* | *Vertical market "smart scanner"; WAN data transmission options |
| **Vadem Clio**<br>www.vadem.com<br> | 999 | 9.4", 640x480, 256c | 90MHz<br>MIPS | 16 (32)RAM<br>24 ROM | 33.6k |  | L-Ion/ 12hr | 11.25x8.75x1/3.2* | Sleek; unique 3-position hinge for notebook, display, tablet functioning |
| <br>**WPI Husky FeX 21**<br>www.huskyinc.com | 1,900 | 6.5", 640x240, c/m | 75MHz<br>Toshiba | 16 (32)RAM<br>16 ROM | 33.6k | Cf,U | NiMH/ na | 7.5x6.1x1.5/1.6* | Vertical market device. Flat, unhinged device with keyboard below screen |

## Handheld PCs

*Windows CE 2.0+ operating system and Handheld PC Edition of built-in applications. All units have backlit touchscreens; All units (except the Velo 500) have PC Card slots; All units have serial and IrDA ports, built-in microphones and speakers. "Discontinued" devices are no longer being made, or may still be available in the distribution chain. We no longer list CE 1.0 H/PCs.*

| PC COMPANION | PRICE | DISPLAY(C=COLOR) | CPU | RAM/ROM | MODEM | PORTS | BATTERY | SIZE(IN)/WT(LB) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| **Casio A20**<br>www.casio-usa.com<br> | $600 | 6.5", 640x240, mono | 80MHz<br>SH3 | 8 RAM<br>8 ROM |  | Cf | AA/ 25hr | 7.25x3.68x1/1* | Discontinued; long battery life; optional L-ion rechargeable |
| <br>**Casio PA-2400**<br>www.casiohpc.com | na | 480x240, mono | 80 MHz<br>SH3 | 8 RAM<br>16 ROM | na | Cf | L-ion/ 15hr | 0.8x 7x 4.25/1.1* | Vertical market; pen-entry only; accepts A/ |
| **Compaq 2010c**<br>www.compaq.com<br> | 899 | 5.9", 640x480, 256c | 75MHz<br>MIPS | 8 (32)RAM<br>16 ROM | 33.6k |  | NiMH/ 4hr | 3.9x .3x1.6/0.95* | Accepts AA batteries; Upgrade chip to H/PC Pro available |
| <br>**Ericsson MC-16**<br>www.ericsson.com | 800 | 640x240, mono | 60MHz<br>SH3 | 8 RAM<br>10 ROM | IrDA* | Cf | NiMH/ 10hr | 7.2x3.6x1.1/1* | *Interfaces with Ericsson mobile phones via IrDA e modem interface |

# At A Glance!

| PC COMPANION | PRICE | DISPLAY(C=COLOR) | CPU | RAM/ROM | MODEM | PORTS | BATTERY | SIZE(IN)/WT(LB) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| **Hitachi HPW-200EC**<br>www.hitachi-hpc.com<br> | 799 | 8.1", 640x240, 256c | 100MHz<br>SH3 | 16 (32)RAM<br>12 ROM | 33.6k | Cf | L-Ion/ 10hr | 10.0x 5.2x1.3/1.8# | Upgrade chip to H/PC Pro available |
| <br>**LG Phenom Express**<br>www.lgphenom.com | 599 | 8.1", 640x240, 256c | 100MHz<br>SH3 | 32 RAM<br>16 ROM | 56k | Cf,P2,V, | L-Ion/ 12hr | 9.3x 5.9x 1/1.8# | Upgrade chip can turn Express into H/PC Pro<br>See note right below this entry |
| **LG Phenom Ultra**<br>www.lgphenom.com<br> | 499 | 8.1", 640x240, 256c | 100MHz<br>SH3 | 16 (32)RAM<br>12 ROM | 33.6k | Cf | L-Ion/ 10hr | 10.0x5.2x1.3/1.8# | LG has stopped manufacturing H/PCs but will sell and support existing stock |
| <br>**NEC MobilePro 750C**<br>www.neccsd.com | 700-900 | 7.3", 640x240, 256c | 80MHz<br>MIPS | 16 (32)RAM<br>16 ROM | 33.6k | Cf,V | L-Ion/ 8 hr | 9.6x4.8x1.2/1.9# | Discontinued |
| **Novatel Wireless CONTACT**<br>www.novatelwireless.com<br> | 1,000 | 7.1", 640x240, mono | 80MHz<br>SH3 | 8 (32)RAM<br>8 ROM | 14.4k | Cf | L-Ion/ 8hr | 7.6x4.9x1.2/1.5# | Landline and wireless CDPD modem; communications software |
| <br>**Philips Velo 500**<br>velo.philips.com | 550 | 6.2", 640x240, mono | 75MHz<br>MIPS | 16 (24)RAM<br>16 ROM |  | Md* | NiMH/ 15hr | 6.8x3.8x1.3/0.9# | Discontinued; *Accepts DRAM cards for memory expansion; V-module adds PC Card slot |
| **Sharp Mobilon HC-4500/4600**<br>www.sharp-usa.com<br> | 700 | 6.5", 640x240, 256c | 74MHz<br>MIPS | 16 (32)RAM<br>16 ROM | 33.6k |  | NiMH/ 6hr | 7.3x3.7x1.2/1.1# | Accepts optional Digital Camera Card |
| <br>**Sharp Mobilon HC-4100**<br>www.sharp-usa.com | 500 | 6.5" 640x240 mono | 74MHz<br>MIPS | 12 (16)RAM<br>16 ROM | 33.6k |  | AA/ 20hr | 7.3x3.7x1.2/0.8# | Discontinued; Accepts optional Digital Camera Card |

## Palm-size PCs

*Windows CE 2.0 or 2.11 operating system and Palm-size PC edition of built-in applications; All units have backlit touchscreens; all units have CF slots, serial and IrDA ports.*

| PC COMPANION | PRICE | DISPLAY(C=COLOR) | CPU | RAM/ROM | MODEM | PORTS | BATTERY | SIZE(IN)/WT(LB) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| **bCOM Mars**<br>www.bcom.com.tw<br> | $379 | 320x240, mono | 75MHz<br>MIPS | 4 (8)RAM<br>8 ROM | 28.8k |  | 2 AA | 5.4x 3.4x 0.8/8oz | Limited U.S. availability |
| <br>**Casio E-10/11**<br>www.casiohpc.com | 399 | 320x240, mono | 100MHZ,<br>VR411 | 8 RAM<br>8 ROM | 14.4k | A | 2 AAAs | 4.9x 3.2x .72/6.6oz | Optional Modem add-on module, 19.2k; optional rechargeable battery |
| **Casio E-100/105**<br>v.casiohpc.com<br> | 499 | 320x240, 64Kc | 131Mhz<br>MIPS | 16 (32)RAM<br>32 ROM |  | A | L-ion/ 10hr | 3.3x 5.2x .80/8.9oz | Built-in MG3 player; stereo headphone jacks |
| <br>**Compaq Aero 1530**<br>www.compaq.com | 300 | 240x320 mono | 70 MHz<br>MIPS | 16 RAM<br>16 ROM |  | A | L-ion/ 14 hr | 5.13x 3.11x 5 / 5 oz | Smallest, lightest Palm-size PC;<br>readable monochrome screen; good battery life. |
| **Compaq Aero 2100**<br>www.compaq.com<br> | 449-499 | 320x240, 256c | 70MHz<br>MIPS | 8 (16)RAM<br>8 ROM |  | A | L-ion/ 10hr | 5.3x 3.3x .78/11oz | Reflective TFT display readable in daylight;<br>Headphone/microphone jack; vibrating alarm |
| <br>**Everex Freestyle**<br>freestyle.everex.com | 269-449 | 320x240, mono | 66Mhz MIPS<br>(Asc 54 Mhz) | 4 (16)RAM<br>8 ROM |  | A | 2 AAAs or<br>NiMH/ 20hr | 4.8x 3.2x .64/5.290z | Optional docking cradle with 33.6k modem; vibrating alarm |
| **Everex Freestyle 540**<br>freestyle.everex.com<br> | 500 | 320x240, 256c | 78MHz<br>MIPS | n/a |  | A | L-ion/ na | na/na | Optional docking cradle with 33.6k modem; vibrating alarm |
| <br>**HP Jornada 420**<br>www.hp.com/jornada | 400 | 320x240, 256c | 100MHz<br>SH3 | 8 RAM<br>8 ROM |  | A | L-ion/ 6hr | 5.1x 3.2x 0.9/8 oz | Stereo headphone jack, built-in MP3 player, excellent add-on software |
| **HP Jornada 430se**<br>www.hp.com/jornada<br> | 499 | 320x240, 65c | 133MHz<br>SH | 16 RAM<br>8 ROM |  | A | L-ion/ 8hr | 5.1x 3.2x .9/8.8oz | Transparent flip-over cover; MP3 stereo digital imaging |
| <br>**Norand PenKey 6100** | 3,675 | 5", 240x320, mono | naMHz<br>AMD 386 | (8)RAM /<br>1 FlashROM |  | S,LAN,Ir | L-ion/na | na | Vertical market; built-in charger |
| **Palmax PD-300**<br>www.palmax.com | 299 | 320x240, mono | 60Mhz<br>SH3 | 2 (10)RAM<br>8 ROM |  | A | AAA/ na | 4.9x 3.2x .8/6.5oz | Limited availability in U.S. |
| <br>**Philips Nino 200/300**<br>nino.philips.com | 400-500 | 320x240, mono | 75MHz<br>MIPS | 4 (8)RAM<br>8 ROM |  |  | NiMH or<br>AA/ 12hr | 5.3x 3.4x .8/7.3oz | Optional add-on 19.2k modem module (not supportedby the Nino 200) |
| **Philips Nino 510**<br>nino.philips.com<br> | 449 | N/A | 75MHz<br>MIPS | 16RAM<br>ROM na |  | A | NiMH or<br>AA/ 8h | 3.4x 5.3x .75/8oz | Optional add-on 19.2k modem module |
| <br>**Samsung InfoGear**<br>www.samsung.com | na | 340x240, mono | 75MHz<br>MIPS | 2 (8)RAM<br>4 ROM | 33.6k |  | AA/ na | 5.1x 3.4x .9/na | Not marketed in U.S. |
| **Telxon PTC Series**<br>www.telxon.com<br> | na | 240x320, mono<br>or 640x480, mono | 100MHz<br>AMD Elan | 4 (64)RAM<br>512K PROM |  |  | L-ion/na | varies / 1.5 to 2.50z | 3 vertical market, pen-entry devices; built-in barcode readers, rechargers and wireless options |
| <br>**Trogon Palm Power**<br>www.trogoncomputer.com | 215 | 320x240, mono | 54Mhz<br>MIPS | 4 (16)RAM<br>8 ROM |  |  | NiMH or<br>AAA/ 20hr | 4.8x 3.2x .64/5.3oz | Optional docking cradle with 33.6k modem; vibrating alarm |
| **Uniden**<br>Uniden.com<br> | 379 | 320x240, mono | 75MHz<br>MIPS | 4 (8)RAM<br>8 ROM | 28.8k |  | AA/ 15hr | 5.5x 3.4x .74/na |  |

## Auto PC

*Windows CE 2.0 operating system and Auto PC built-in applications. Uses voice command and buttons to access features. Comes with AM/FM tuner, CD player, 35 watt 4 channel amplifier and computer in an integrated unit that fits in the dashboard of the automobile. Includes phonebook, navigation, voice recognition and control software.*

|  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| <br>**Clarion Auto PC**<br>www.autopc.com/index2.html | $1.299 | 6", 256x64, 8c | naMHz/<br>SH3 | 16 RAM<br>8 ROM |  | Cf,U | 12v auto<br>battery | na* | Option: GPS, turn-by-turn directions, cellphone cradle, wireless receiver, vehicle diagnostic module<br>* Size of an in-dash AM/FM stereo |

# Quick Tips
## & PC Companion Tricks

**by Jim Christian**

*Associate Editor,* Handheld PC Magazine*; Sysop, CompuServe's Windows CE Forum; Associate Forum manager, MSN's Windows CE forum.*

### A big, usable, external keyboard – for free!

You already have it! It's attached to your desktop PC computer and it's easier and less expensive to use than any of the smaller, customized solutions. All you need is CEKeyboard, a free program from Foliage.

1. Download CEKeyboard at www.foliage.com/ce/body.html.

2. Connect your PC Companion to your desktop PC using the synchronization cable that came with your device. (Make sure you have ActiveSync installed.).

3. Install the Windows CE portion of the program.

4. Run the Desktop PC portion of the program.

A small Window labeled "Foliage CE Keyboard" pops up (see Screen 1). Whenever you click on that window to select it, you can type directly into the open application on your PC Companion (Pocket Calendar, Contacts, Inbox, Word, Excel, etc.). It even works with third-party applications you install on the PC Companion.

CEKeyboard can be used to more quickly enter or modify any textual information on your PC Companion, but it is particularly useful for applications that are only found on the PC Companion. A byproduct of using CEKeyboard is that you have more useable screen space on the Palm-size PC because you do not need to have the soft keyboard or JOT window up while entering information.

### A unique double-protection against data loss

Say you're traveling and your H/PC crashes, along with your vital Pocket Outlook data. "No problem," you say! "I've got a backup." This happened to me once on an airplane, and when I tried to restore from my backup, I got a message telling me that my backup file was corrupted. I had the data back on my desktop PC, but that was 5,000 miles behind me. I was out of luck.

Now I carry a secondary backup in the form of a Pocket Excel spreadsheet. If it ever happens again, all I have to do is open my Pocket Outlook backup spreadsheet in Pocket Excel. First make sure that the data on your PC Companion is synchronized with your desktop PC. Here's what you do to create the data backup.

1. Open Outlook on your Desktop PC.

2. Go to the Outlook application you want to back up (Contacts, Tasks, etc.).

3. From the File menu, select the Import/Export option.

4. From the "Choose an action to perform:" menu, select Export to a file.

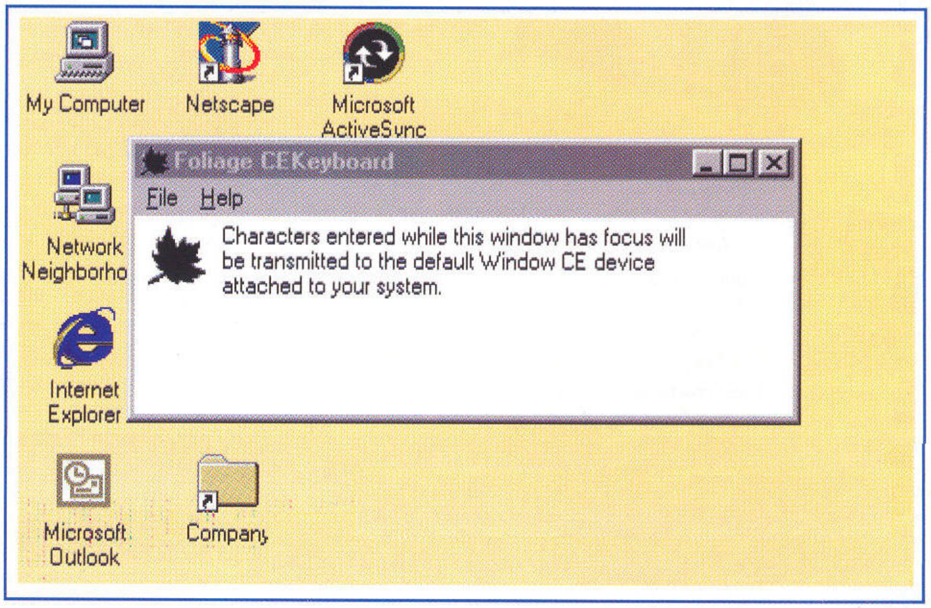
5. From the "Create a file of type:" menu, select Microsoft Excel. (You can also export to dBase, Access and FoxPro database formats as well as comma or tab-delimited text files.)

Once you've saved the Excel file, connect your PC Companion to your desktop PC, open up ActiveSync's Explorer and drag the Excel file to the My Documents folder in your PC Companion. ActiveSync will convert it to PocketExcel format. Always have backups available, and in multiple ways!

### ACT! & pcAnywhere CE for free!

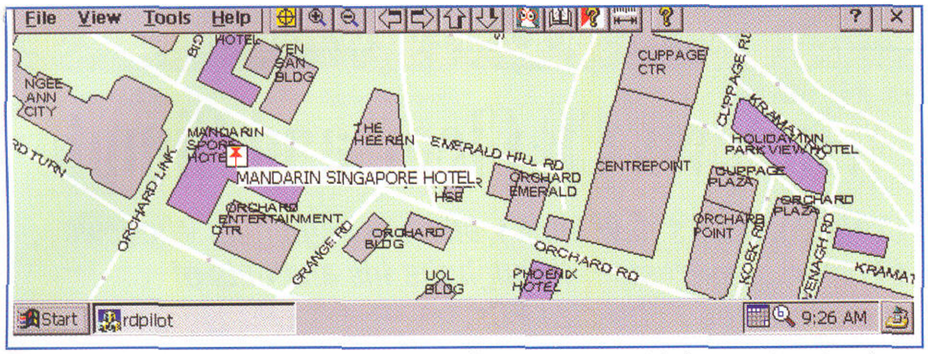
The following announcement is from the Symantec Knowledge Base on Symantec's Web site, under the title "Channel Withdrawal Plan for ACT CE! 1.0 and pcAnywhere CE 1.0."

ACT! for Windows CE 1.0 and



Characters entered while this window has focus will be transmitted to the default Window CE device attached to your system.

Screen 1: CEKeyboard lets you type data into your PC Companion from your desktop PC's full-size keyboard.



Screen 2: RoadPilot CE, a GPS-compatible mapping program of Singapore, lets you search for locations and zoom in and out on detailed maps. Downtown Singapore is shown here.

PCAnywhere CE 1.0 are being withdrawn from the retail channel because of incompatibilities with the newer CE hardware devices and the latest version of the CE operating system. These products will be offered as a free download for customers with appropriate CE devices. Only H/PCs running Windows CE 2.0 with a half-height screen are supported. For a list of all supported devices, go to www.symantec.com/act/actce_support.html.

Note that pcAnywhere no longer supports the CE version of the program. If you want to use pcAnywhere CE don't upgrade to the new version.

## Be super careful with Power Supply Properties

I occasionally find programs or features in programs that can cause BIG problems in your PC Companion. These aren't bugs, but intentional features and it just makes me wonder why they were created in the first place. When I find these, I try and let you know.

Power Supply Properties, from Softwareburo Muller, is one such program. (I'm not even going to give you their Web site!) The program is supposed to display your battery status and let you configure your power-down and backlighting options. It doesn't sound too bad, does it? In fact, everything's fine until you get to an ill-named tab called "Drop Out." What does that mean? According to the description in the program, this feature "simulates a total drop out of your H/PC." Still confused? I'll translate:

"It wipes out your PC Companion's internal memory! Zip! Kaput! Fini!"

It deletes every bit of the information in you Handheld PC – all of the programs you've installed and all of your data are gone. Normally, you have to consciously take out the main and backup batteries to so completely clean out your PC Companion. But Power Supply Properties makes it as easy as pulling a trigger on a pistol!

A little re-write of the program would fix the problem. Either completely remove the feature, or hid it behind a few warning messages; "Are you really, really sure you want to lose everything!" He might even password-protect the feature. Until he does, be really, really careful with this one.

## AT&T WorldNet Dialer is here!

AT&T WorldNet Service is a global Internet Service Provider with monthly access plans from $9.95 to $21.95 a month (www.att.net). They provide a free utility that simplifies setup for Windows CE devices. Download AT&T WorldNet Service Setup for Windows CE 1.0 & 2.0 for free at http://download.att.net/wincedl.html.

The software has a new feature called "Phonebook." This feature provides you with the ability to select a local phone number nearest you based on the state and city. It's a great tool for travelers. You can set up multiple locations such as one for your trip to San Francisco and another one for your time in Georgetown. For each location, you can have a different area code. In fact, you can even dial from the phonebook after you have selected the location of choice. WURD (WorldNet User's Reference Desk) is an independent online source of information and tips for using AT&T WorldNet. Visit them at www.wurd.com.

## Bringing symbols and graphics over when converting Word documents to P/PC Note Taker

When using ActiveSync's Explorer, if you drag Word documents from a desktop PC folder to one on the Palm-size PC, the document gets converted to Note Taker format. Most of the standard symbols in the Word document (i.e., ®, ™, ©) will be displayed in the Note Taker document.

If the symbol doesn't display properly, you probably don't have the necessary font on your Palm-size PC. Check in the desktop PC Word document to see what font is being used. Then find the font in your desktop PC's Fonts folder (usually a sub-folder in the Windows folder) and drag it into the P/PC's Font folder (also a sub-folder of the P/PC's Windows folder). The font must be a TrueType font to work. Once the font is on the P/PC, you should be able to see the symbols.

## Print out Windows CE help files

The Help files found on PC Companions are HTML documents. If you want to print them out, download them to your desktop PC using ActiveSync, open them in your desktop PC's Web browser, and print.

You can open the files in Pocket Internet Explorer, but you can't print from it. You can cut and paste text from Pocket Internet Explorer to Pocket Word, and print from that. But you loose the HTML formatting. You can also directly open up an HTML document in Pocket Word, but it displays everything as text, including the HTML formatting codes.

## Visiting Singapore? Try RoadPilot for Windows CE

Geo Millenium System Pte Ltd, a leader in GIS/GPS applications, has announced the availability of RoadPilot CE 2.0, a GPS-compatible mapping program of Singapore, now available for Handheld PCs. You can do a quick search on different categories of locations (Cinemas, Golf Courses, Hospitals, etc) and zoom in and out on a detailed map of Singapore (see Screen 2). RoadPilot occupies 3Mb of memory on your H/PC, and can be stored on a PC or CF Card. It doesn't look like they have a free demo available. For more information, visit their Web site at www.geonav.com.sg/

## You delete files to free memory, but available memory doesn't go up!

The culprit is your Recycle Bin – a safety feature built into Windows by Microsoft. The files are not really deleted but moved to the Recycle folder. Open it up on your H/PC and empty it. Windows CE also creates temporary files that are supposed to be automatically deleted, but sometimes don't. A soft reset (pressing the reset button) sometimes deletes these invisible files.

## Need help with Pocket applications? Ask Microsoft.

Microsoft publishes Frequently Asked Question (FAQ) archives answering many questions about the built-in applications.

For Pocket Word, go to http://support.microsoft.com/support/windowsce/pocketword/faq/default.asp

For Pocket Excel, go to http://support.microsoft.com/support/windowsce/pocketexcel/faq/default.asp

For Pocket Internet Explorer, go to http://support.microsoft.com/support/windowsce/pocketie/faq/default.asp

/cposupport/handheld_computers/software/680ddi64.zip.html.

## Kanji for Windows CE

Kanji is the character set used in the Japanese language, and if you're going to visit the Land of the Rising Sun, it's good to know a Kanji. A Windows CE program called KingKanji helps you learn to read and write script. Download a copy at the Gakusoft Web site: www.geocities.com/~mramsey99/products.html. KingKanji is available for H/PCs and P/PCs.

## You may need more than one CompactFlash card!

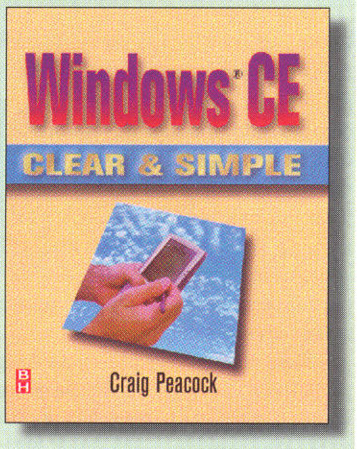
With the advent of the new MP3 audio players, video software players, book viewing software for your PC Companion, and map display programs, you may be needing a lot more file storage space on your Windows CE device. CompactFlash cards are the simplest solution, and they are getting less expensive all the time. Consider getting several and dedicating them to different uses: one for books, another for music, a third for videos, and a fourth for software applications. Of course you'll also need one for backups. If you have more than one card for music or videos, you might consider installing the audio/visual player program on each card, freeing up the internal memory of your PC Companion. ■

BOOK REVIEW BOOK REVIEW BOOK REVIEW

# Windows CE Clear and Simple

### *Craig Peacock's new book walks the beginning Windows CE user, step by step, through the ins and outs of Handheld and Palm-size PCs.*

### By Rich Hall



If you've just purchased a Windows CE PC Companion, if you're thinking about doing so, or if you've had one for a while and are still puzzled by some of its features, check out Windows CE Made Simple, by Craig Peacock. (Craig is a regular contributor to *Handheld PC Magazine*.)

The book covers the knowledge a beginning and intermediate PC Companion user needs. It starts off with an introduction to the differ classes of PC Companions (Handheld PCs, H/PC Pros and Palm-size PCs) and includes a description of the hardware and software standard with each device. This is followed by the basics in setting up the PC Companion.

The central portion of the book looks at built-in applications of the various classes of PC Companions. Wisely, Craig organized most of the book around the work you need to do. Chapters include Start Here; Setting Up; Pocket Outlook; Documents and Notes; Finances and Money; Communications; Getting Online; E-mail; and Other Applications.

#### A step-by-step approach

The book is very well organized. Each chapter has its own table of contents and each section of a chapter thoroughly covers a discrete topic. For example, the section titled "Using an Ethernet card" starts out with a description of what an Ethernet card is and what's needed to use them. This is followed by a step-by-step on how to set up a card and make the Ethernet connection. Craig includes screen shots of the dialog boxes you run into during the setup, and a basic tip (connect your PC Companion to its AC power adapter when using Ethernet cards).

One of the interesting things Craig does is slip in a few third-party software programs. At first I wondered about the wisdom of this. Then I looked at the programs he chose: Pocket Finance (a simple electronic checkbook developed by Anyware Consulting); Tipster (a one-touch tip and sales tax calculator from Ilium Software), bFIND (a much-needed global-find utility from bSquare Development), eWallet (lets you store important information on electronic data cards, from Ilium Software) and QuickWallet (similar to eWallet, password protected, from Applian Technologies). They all add simple functionality useful to the most basic or sophisticated user. They belong in a "basics" book.

#### More than the basics

Craig's book not only covers the basic features of PC Companions it takes a look at the more challenging features. He has sections titled Using an Ethernet Card; Shared Network Drives; Network Printing; Dial-Up Connections; a whole chapter on E-mail; and more. He does a good job of making these more complex features "clear and simple."

*Windows CE Clear & Simple is available online at www.Amazon.com. The price as of 10/12/99 was $10.36. Windows CE Clear & Simple is published in the U.K. under the title Windows CE Made Simple.*

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Hal
Goldstein

# Is a Windows CE Shakeout in Progress?

Philips and LG Electronics have stopped producing PC Companions and we've heard little from Sharp and Everex recently. At the same time, Palm Computing's Palm III and V still dominate the handheld market. Their Palm VII is turning heads and Handspring's Visor and Symbian's (Psion's) new handhelds are ready to join the competition. What does that all this mean for Windows CE and its users?

The current shakeout in PC Companion manufacturers isn't that surprising. When Microsoft entered the handheld arena in 1997, it did a great job finding partners to manufacture new devices using the new Windows CE operating system. It convinced these partners that the handheld market would be huge and that supporting a standard operating system (Windows CE) would help jumpstart things. The logic was good, but the product needed to be better.

Microsoft followed its usually effective product development strategy with the introduction of Windows CE. It gave its best shot, but got it out quickly. Then it waited for user feedback to fine tune and fix things in the next release. Unfortunately, many users (and reviewers) were unsatisfied with Windows CE 1.0 and its built-in applications. In the meantime, Palm Computing continued its surprising success by developing a simpler operating system and platform that did fewer things, but did them very well.

Three years have past. The Windows CE operating system and built-in applications are much improved. And with the release of ActiveSync 3.0, Microsoft has finally gotten desktop connectivity right. Unfortunately it took a long time, and that was hard on many of the pioneering manufacturers of PC Companions. Also, lower than expected sales of Windows CE devices meant lower sales of third-party hardware and software accessories.

## The good news is...

Fortunately, not all the news is bad. The core operating system is now strong, the built-in applications are powerful, and Microsoft is ramping up for the release of the next, new and improved version of Windows CE (code named "Rapier") sometime next year. Now is an excellent time to be aboard the Windows CE bandwagon. Hewlett-Packard and Compaq have shown the most commitment to Windows CE by introducing Palm-size, pocket sized, and mini-notebook sized units. Casio is focussed on its strength, producing exciting consumer palm-size product. Users seem quite satisfied with NEC's small, compact, touch-typeable offerings. Vadem's dual-purpose key and tablet machine wins the prize for most innovative design. We believe that the manufacturers and software/accessory developers willing to assume a Windows CE leadership position NOW, will be in good shape as the market takes off.

And, yes! The pundits predict that the handheld market will be huge and Microsoft's share will continue to grow. IDC, an independent market research company, has predicted total sales for all types of handhelds: 1998 — 4.3 million (27% Windows CE); 2000 — 8.1 million (44% Windows CE); 2003 — 18.9 million (70% Windows CE). Microsoft has demonstrated its commitment to Windows CE by investing five billion dollars with AT&T to insure Windows CE is the operating system for AT&T's TV set-top boxes.

We're already seeing many sizes, shapes and capabilities in Windows CE devices. The release of the next version of the operating system will bring even more diversity to the Windows CE offerings. Again, the companies that can stick it out will be in the best position to take advantage of the rising Windows CE wave.

## How the shake-out affects you!

The shake-out probably won't affect the end-user much. The companies left are the big players. Even though Philips and LG no longer manufacture PC Companions, they are still supporting existing users. However, you won't see upgrade offers from LG and Philips when newer versions of Windows CE come along. We don't expect many new PC Companions to be announced until the new version of the Windows CE operating system is released in the first or second quarter of next year. And third-party software and accessories developers will be hedging their bets for a while, also.

## What about us?

*Handheld PC Magazine* is in the same boat as HP, Casio, Compaq, and third parties — we want to stick it out until Windows CE takes off. Unfortunately, we don't quite have the same resources as HP, Casio and Compaq. Although we could easily double the content of each issue, subscription and advertising revenue does not yet support that kind of expansion. We would like to find an investor who understands the potential of this market.

We appreciate very much your continued support of this magazine. You, our reader, and our advertisers, are the real leaders of this industry. Our research shows that most of our readers have bought more than one PC Companion. You're also the people who purchase third-party software and accessories; who educate others about Windows CE; and who are most responsible for word-of-mouth sales. In other words you are the ones responsible for the expansion of the Windows CE platform — the ideal customer for an advertiser.

We welcome suggestions. As always, email me at hal@thaddeus.com. ■

Hal Goldstein (hal@thaddeus.com) is Publisher and Executive Editor of *Handheld PC Magaz*[illegible] and president of Thaddeus Computing. He [illegible] published, edited, and written for five magazines on portable computing since founding Thaddeus Computing in 1985.

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